1996 ANNUAL NARRATIVE

REVIEW AND APPROVALS

BENTON LAKE NATIONAL WILDLIFE REFUGE

Great Falls, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1996

James E McCollum 12/18/97

Project Leader Date Associate Manager Review Date

Regional Office Approval Date

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INTRODUCTION

Benton Lake is a 12,383 acre refuge located on the western edge of the northern Great Plains some 50 miles east of the Rocky Mountains and 12 miles north of Great Falls, Montana. Benton Lake proper is a 5,000 acre closed basin marsh, terminus of a 145 square mile watershed. Refuge terrain is gently rolling with short-grass native prairie being the predominant vegetative type. Four mountain ranges are readily visible from the refuge; the Highwood Mountains to the east, the Little Belt Mountains to the southeast, the Big Belt Mountains to the south and the Rockies to the west.

The climate is generally temperate with wide fluctuations in temperature and precipitation. Summer highs may soar to near 100 degrees F while winter lows may reach -50 degrees F. Rain and snow are erratic. Annual precipitation averages about 15 inches. Extremely windy conditions occur in the fall through spring, due to frequent Chinook winds blowing from the southwest over the Rocky Mountain front.

The lake basin has been diked into eight marsh units to provide better water control for the enhancement of submergent and emergent vegetation and to limit botulism outbreaks. Water management is generally by gravity flow, although an inter-unit pumping system allows for great flexibility, especially in the event of a botulism outbreak.

Refuge wildlife is dominated by water birds including most major species of ducks, snow and Canada geese, gulls, terns and various shorebirds. Gadwall, mallard, pintail and lesser scaup are the major nesting duck species. Other nesters include black terns, white-faced ibis and up to 13,000 pairs of Franklin gulls, The refuge is an important migration stop during spring and fall with up to 100,000 ducks, 5,000 tundra swans, 40,000 snow geese and 3,000 Canada geese present. Bald eagles and peregrines are often seen in spring and fall.

Other refuge wildlife includes twenty different species of mammals such as white-tailed jackrabbit, muskrat, mink, raccoon, weasel, coyote and a limited number of white-tailed deer, mule deer and pronghorn. Only a handful of reptile and amphibian species are present. No sizeable fish occur due to the shallowness of the marshes.

Land use around the refuge is predominately cropland with wheat being the principal crop grown. The area from Great Falls north to the Canadian border is known as the "Golden Triangle" of Montana due to the monoculture of small grains. The fallow-crop system employed over much of the area is causing problems with refuge water quality by accelerating salinity and trace element accumulation in springs and seeps. Changing private land use practices in the watershed to benefit refuge water quality is a major challenge of the years ahead.

The Benton Lake Wetland Management District and the Montana Partners for Wildlife program are also administered from the refuge. Details of those programs are found in the District narrative following the refuge section.

INTRODUCTION

TABLE OF CONTENTS

Page

J. OTHER

K. FEEDBACK NTR

The year began with the Refuge in custodial management status due to the government-wide shutdown of non-vital operations. With the President and Congress at loggerheads over budget issues, it was the public and Service employees who were pinched in the middle. It was not a very "Happy New Year" for either the "non-essential" employees (who were unsure about when they could return to work) or for the lonesome "emergency" personnel required to work (unsure of whether they would be paid). Fortunately from a public use standpoint, the shutdown occurred at a time of very low visitation.

JEM **12/31/95**

1996 NARRATIVE REPORT

A. HIGHLIGHTS

1. A flume installed on Lake Creek improves measurement of refuge inflows. Section I.1

2. A White-faced Ibis nesting study documents Montana's largest breeding colony. Section G. 4

3. Two new refuge birds were sighted this year. Section G.7

4. Avian botulism occurred in 1996. Section G.17

B. CLIMATIC CONDITIONS

Nineteen-ninety six was the coldest year ever recorded at Great Falls since weather records began being kept in 1892. The average temperature for the year was 40.2 degrees, breaking the previous record of 40.4 degrees set in 1951. The average temperature was below normal in 9 of the 12 months. Interestingly, the year's high temperature of 101 degrees on August 11th marked the first time the thermometer rose above 100 since August 15th, 1990. The low for the year at Great Falls was -35 degrees on February 2nd while the low at the refuge was -38 recorded on January 30 and February 2.

Precipitation was below normal. Only 12.24 inches was measured at Great Falls while 12.93 inches was collected at the refuge. This amounted to a 20 percent shortfall from the 30 year average. Snowfall totalled 94.7 inches, about 50 percent above normal.

Official weather data for the refuge is adopted from the Great Falls National Weather Service office located about 15 miles south of the refuge. Precipitation is recorded at the refuge using National Weather Service approved instruments. The following table summarizes weather data by month.

TABLE I

WEATHER DATA - 1996

	GREAT FALLS					REFUGE
	Temperature (F)		Precipitation			Precipitation
	High	Low	Total	Depart	Snow	Total
January	58	-33	.49	- .42	8.8	.78
February	63	-35	.26	- .31	11.5	.55
March	62	-16	.84	- .22	21.7	1.16
April	79	21	1.42	+ .01	8.6	.98
May	70	23	2.68	+ .16	2.0	3.05
June	93	37	1.53	- .86	0	1.03
July	98	41	.20	-1.04	0	.46
August	101	41	.60	- .94	0	.56
September	82	24	1.77	+ .53	0	1.23
October	83	2	.60	- .18	8.2	.66
November	61	-19	.63	- .03	9.2	.81
December	52	-27	1.22	+ .37	24.7	1.60
Max/Min Temps	101	-35				
Precip Total/Departure from Avg.			12.24	-2.97	94.7	12.93

D. PLANNING

3. Public Participation

A public meeting was held at Power, MT on May 29 to explain to the public the negotiation in progress between the Montana Federal Reserved Water Rights Compact Commission and the Fish and Wildlife Service. Cheryl Williss of the Region 6 Water Resources office was present along with commission staff to explain the process of settling federal reserved water rights as they relate to Benton Lake Refuge. Refuge Manager Jim McCollum presented a short slide program about the refuge and the water management program. About 20 refuge neighbors and residents of the Lake Creek watershed were in attendance. Although there was some initial misunderstanding among some attendees about the difference between federal reserved rights and individual water rights, no serious questions arose at the meeting. The main interest of several individuals seemed to focus on how to get more water into the watershed from Muddy Creek. Because that issue was outside the scope of the Service and the Commission, that idea could not be addressed.

4. Compliance with Environmental and Cultural Resources Mandates

The annual Section 7 review of the refuge hunting program for effects on endangered species found no effects. There were no recommended changes in the refuge hunting program.

5. Research and Investigations

Calming Troubled Waters: Contaminants at Benton Lake National Wildlife Refuge. A Plan of Action. 1991. Benton Lake NWR, Black Eagle, Mt.

Former Refuge Manager Don Hultman wrote the Contaminant Action Plan as "a bridge between the necessary world of research and the practical, down-to-earth methods of land management to solve the contaminant problem". The plan provides an overview of the contaminant issues, research and accomplishments to date, and identifies future plans, funding needs and target dates. Two general contaminant problems exist including the salinization of the refuge marshes and the accumulation of trace elements such as selenium.

The goals of the Plan related to contaminant cleanup are:

1) Maintain or reduce levels of trace elements such as selenium, boron and mercury at levels which pose no threat to species using Benton Lake. For selenium, the objective is 2μg/L or less for all waters entering the lake (above this level selenium begins to bioaccumulate in a system).

2) Maintain a salinity level of no greater than 6,000 μS/L in any of the refuge marsh units, and no more than 5,000 μS/L for all units combined, when water is at planned management levels in any given year. Salinity above 5,000 μg/L begins to change the aquatic plant community thus affecting current marsh productivity and poses a risk to mallard duckling survival.

FY 1996 ACCOMPLISHMENTS:

Nine actions were determined to be necessary to reach the goals and objectives of contaminant abatement at Benton Lake NWR. In 1992, the first progress report was written on each of these actions. Following is a discussion of progress made in FY 1996.

Action 1: Determine the refuge's water budget

Y.Q. Zhang and J.N. Moore of the University of Montana Cooperative Research Unit finalized the development of a model that describes selenium accumulation in Benton Lake NWR marsh sediments. By early FY 1997 they are expected to complete a final report on the selenium cycle in the Benton Lake marshes that includes information from two FY 1996 studies as well as information collected and analyses conducted under previous investigation at Benton Lake. The first of the 1996 studies was to determine the rate of selenium volatilization from various refuge study sites. The second study was to determine the role of algae and water milfoil in the up-take of selenium. Information attained from these two studies will be incorporated into the selenium cycling model. Eight manuscripts detailing selenium distribution, fractionation and speciation, conditions controlling volatilization transformation potential of selenium in sediment, and the simulation model of selenium cycling in a wetland system were submitted by Zhang and Moore for journal publication in FY 1996. These reports are on file at Benton Lake.

The U.S. Geological Survey (USGS) completed its water-resources investigation report entitled "Hydrology and Water Chemistry of the Benton Lake Basin with Emphasis on the Fate of Salinity at Benton Lake National Wildlife Refuge, West-Central Montana." A USGS colleague-review process for the report was completed in FY 1996. Publication is expected to begin in the later part of FY 1996 or the beginning of FY 1997. This study determined the hydrology and water chemistry of Benton Lake, surrounding groundwater, seeps, and stream flow including Lake Creek and other tributaries. Quantification and loading of major ions, dissolved solids, and selenium in Benton Lake were identified as well as their potential to accumulate and create a biological hazard within the lake. Information from this report will help management achieve refuge goals by increasing the understanding of water and contaminants in the marsh system. The following is a brief synopsis of the USGS findings:

* Dissolved-solids loading to Benton Lake during 1991-1995 was 41,416 tons with 52 percent of these solids coming from natural runoff.

* Annual dissolved-solid loading was higher in 1993 when precipitation was above normal. During 1993, only 16 percent of the 15,109 tons of dissolved-solids came from pumped water.

* During 1991-1995, the total selenium load entering the refuge was 661 lbs. Natural flows accounted for only 25 percent of the water entering Benton Lake, yet these natural flows accounted for 52 percent of the total selenium load occurring on the refuge.

* Estimates for 1970-1994 indicate that selenium loading in natural runoff may be greater than indicated by the 1991-1995 data. The USGS calculated the long-term annual selenium load from natural runoff to be 137 lbs, which is about 2 times the mean annual load measured in 1991-1995.

* Two tributaries to Lake Creek appear to be significant sources of selenium. These tributaries have perennial flow supplied by subsurface agricultural drainage from non-irrigated

wheat fields. The selenium load in each is about three times higher than the load carried by Lake Creek.

* Selenium concentrations in Benton Lake ranged from <1-4 μg/L, with a median of <1 μg/L. Selenium entering the Lake is rapidly sequestered into the bottom sediment and biota through biogeochemical processes.

* Dissolved solids do not appear to be accumulating in the Benton Lake management units. If salinity levels are increasing, the rate of increase is small enough to be masked by the variability that occurs seasonally and over multi year periods.

* Dissolved solids in lake water probably precipitate on or in the lake bed as the water evaporates. These precipitates are then either removed by wind during dry periods, redissolved in water after refilling, or stored in the sediment as insoluble salts.

* Current management of seasonal flooding and drying is a strategy that appears to be important in managing salts. Leaving lake beds dry and exposed to wind can reduce the soluble-salt content of the lake bed. If the refuge units were continuously flooded and no outlet were constructed, salinity levels would be expected to increase as water evaporated each year.

* Land-use changes within the Benton Lake basin would cause a reduction in dissolved solid and selenium loading.

Action 2: Identify all seeps in the refuge watershed

This action was completed in 1994.

Action 3: Institute a systematic sampling plan

The Benton Lake NWR Contaminant Sampling/Monitoring Plan which was completed in 1993 has been revised to reflect changes in equipment and monitoring techniques. The Sampling/Monitoring Plan encompasses information pertaining to surface water salinity testing, ground water salinity testing and water level monitoring in wells associated with the saline seep remediation pilot project, and invertebrate sampling.

FY 1996 sampling and monitoring accomplishments included:

1) Continuous specific-conductance monitoring of Lake Creek during the ice-free seasons
2) Bi-weekly surface water quality monitoring during the ice-free seasons
3) Bi-weekly ground water depth measurements of wells
4) Annual ground water monitoring and well bailing
5) Aquatic invertebrate sampling at established locations in the marshes
6) Emergent and submergent vegetation sampling at established locations in the marshes
7) Periodic water sampling within the watershed to complement USGS work and to further characterize tributaries entering Lake Creek
8) Photographic documentation of refuge saline seeps
9) Discharge area monitoring of the unit IVc seep
10) Preparation of the new monitoring station; a flume acquired in FY 1995 was installed in Lake Creek under a written agreement with an adjacent landowner/producer.

The 1996 Invertebrate Collection Crew (L-R) Bill Olsen and John Malloy-ES Helena Contaminants, Nikki Krisfalusi-ES Helena Wolf Volunteer, Mindy Meade-BLNWR, Kate Colenso-YCC Work Leader, Christy Raffa-BLNWR Volunteer and Liz Bradley, ES Helena Wolf Volunteer.
JEM 7/96

Invertebrates collected included Daphnia, Water Boatman and Chironomid. Note the Chironomid (midge larvae) being picked up from a sweep net of bottom sediment.
MLM 6/96

Action 4: Watershed protection

At this time, there has been no landowner interest in participating in USFWS-sponsored land management programs for watershed protection. These programs include wildlife extension agreements, wetland or grassland easements, and fee acquisition. Progress on this action will be closely associated with that of Action 6.

Action 5: Fund a full-time contaminant cleanup coordinator to manage and implement the cleanup and biomonitoring activities associated with Benton Lake NWR remedial actions.

Due to Ecological Services downsizing concerns in the Helena office, the Assistant Environmental Contaminants Specialist hired in 1992 to coordinate contaminant cleanup at Benton Lake NWR, left this position at the end of August FY 1995, to take a job in the Refuges and Wildlife Division. Her duties were divided between a temporary biological science technician located at the refuge and the acting environmental contaminants specialist from Ecological Services, Helena. A review of the temporary biological science technician (Wildlife) position was conducted, and a decision was made to upgrade the appointment to a term GS-404-06.

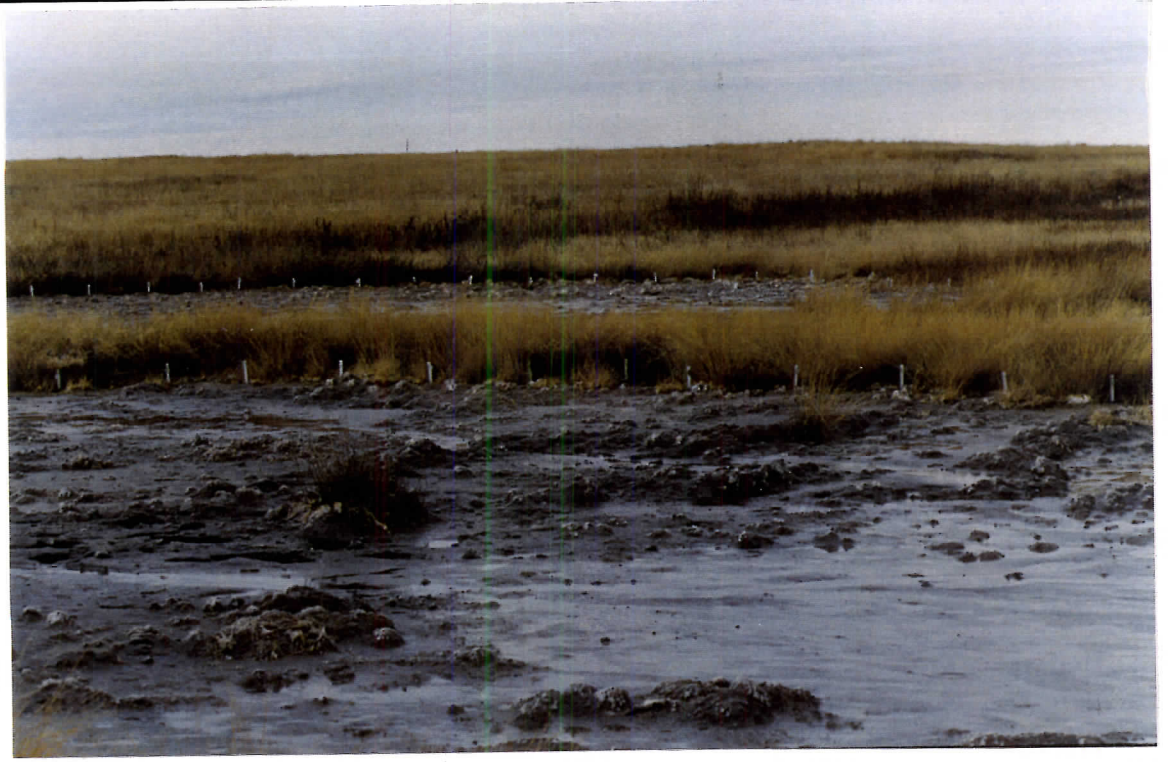
Action 6: Reclaim saline seeps in Lake Creek watershed

As described in the 1994 and 1995 progress reports, the Lake Creek Improvement Association (LCIA) and the Lake Creek Partnership (LCP) obtained federal funding to improve water quality within the Benton Lake watershed. This funding came in the form of two grants; a Clean Water Act section 319 grant and a USDA Water Quality Incentive Program (WQIP) grant.

A Clean Water Act section 319 (non-point source pollution) grant equal to $150,700 was approved by the EPA for use in 1995-1997. The 319 grant has been used to identify seep recharge areas in the watershed and develop site specific reclamation plans. To date, the Montana Salinity Control Association (MSCA) has drilled some 300 wells in a focus area of 50,000 acres. Well drilling efforts and thus recharge area identification has been emphasized on lands owned or operated by participants of the Water Quality Incentive Program (discussed below). Each of the wells is monitored on a monthly basis to document changes in the ground water table. Site specific remediation plans were developed in response to each WQIP participant's property.

A USDA Water Quality Incentive Program (WQIP) grant equal to $256,500 was approved for use within the watershed; this money will provide incentive payments to producers who try alternative cropping systems aimed at reclaiming watershed seeps while maintaining economically vital operations. Multiple sign-up periods indicated that interest from landowners and producers was above the available funding level. As a result, the LCP and LCIA developed ranking criteria to best allocate the funding and the LCP solicited for, and received, increased WQIP funds from the USDA. The original WQIP funds allowed us to completely fund the participants within the two highest priority areas (based on data collected by the USGS for the USFWS and recharge information from MSCA). The additional WQIP funds were appropriated to participants within the remaining watershed.

At the end of FY 1996, 27 producers signed 5 year contracts under the WQIP. The total WQIP funds allotted to these contracts was $302,820. Under these contract agreements, twelve percent (11,235 acres) of the watershed will undergo reclamation of seep recharge



Top: The refuge saline seep remediation project this year included out lining of seep discharge areas with visual reference markers and photo point stations. Delineating the boundary of refuge saline seeps will provide a mechanize to access management activities of seep remediation.
Bottom: Seventeen 3/4 inch PVC pipe numbered consecutively with aluminum tags were placed 29 inches apart and followed the contours of vegetation.
MLM 10/96

areas. Some 6,486 acres of Benton Lake NWR will be affected by the remediation efforts mentioned above. We can not estimate how many of the 2000 acres of discharge seeps will be reclaimed as a result of this clean-up effort.

Action 7: Construct an outlet canal from Benton Lake to the Missouri River

This action would only be initiated if salinity and trace element levels showed a definite upward trend that would endanger plant and animal life on the refuge. Currently, there is no justification for initiating this action. Continued water quality monitoring will determine if it will be necessary to revisit this action in the future.

Action 8: Ensure a more stable water supply of water for the refuge

We continued to investigate ways to ensure a more stable and economical supply of water to the refuge. With existing electrical rates and equipment problems, the refuge operating budget is unable to support an adequate supply of water to the refuge. Staff coordinated with Region 6 engineering to further explore the detailed design and specifications for an inverted siphon that would deliver water from the Greenfields Irrigation District (GID). The USFWS began informal negotiations with the GID in an attempt to obtain an agreement allowing the refuge to attain excess irrigation drain water that the proposed siphon could transport. If an agreement is reached, the GID may make a continuous, low-flow of water available to the Refuge during the non-irrigation season. Staff began assessing what effects a continuous, low-flow water regime would have on our current water management, and a cost-benefit analysis for the inverted siphon was further developed.

Action 9: Address contaminant problems on Waterfowl Production Areas

A final report entitled "Trace Element Concentrations in Sediment and Biota from the Benton Lake Wetland Management District, North-Central Montana" was completed in FY 1995.

COOPERATORS:

Benton Lake NWR, U.S. Geological Survey, Montana Salinity Control Association , U.S. Bureau of Reclamation, University of Montana , Montana State University, Greenfields Division of the Sun River Irrigation Project, Natural Resources Conservation Service (formerly the SCS), Farm Services Agency.

Benton Lake NWR Non-game Monitoring Program. 1996 Progress Report. Meghan J. Piercy and Stephen J. Martin

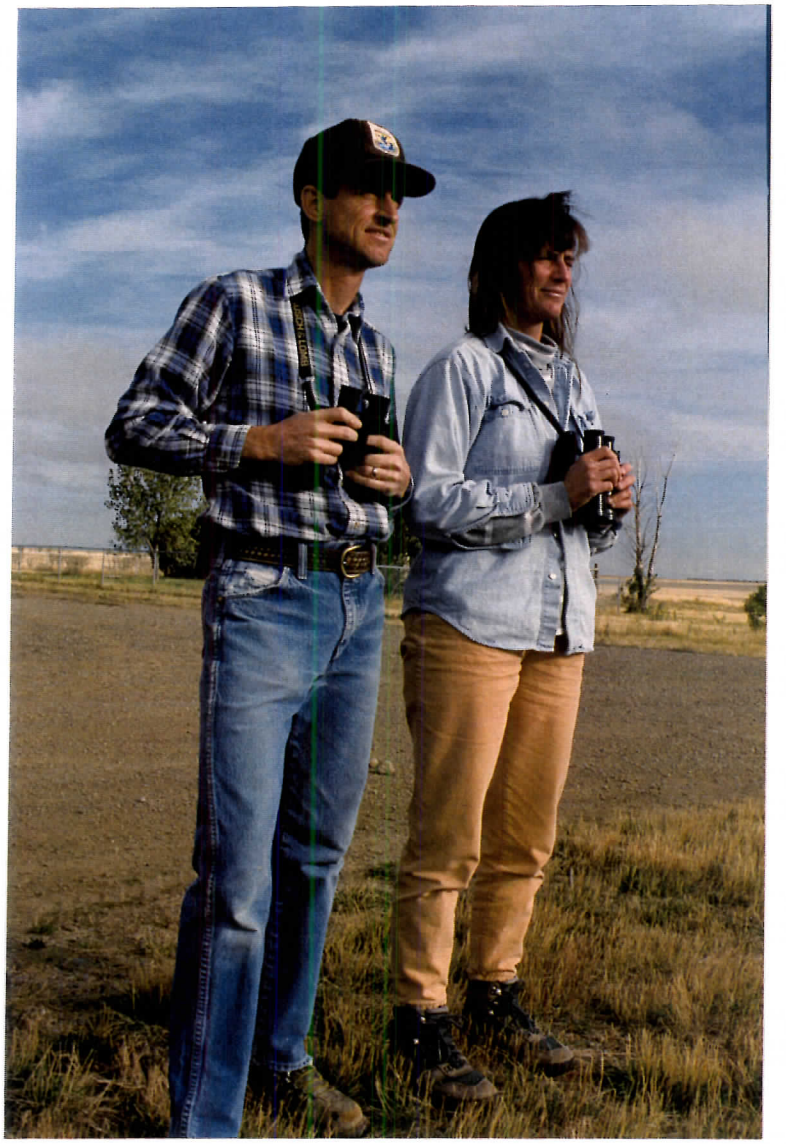
The refuge initiated point count monitoring of nongame native prairie avifauna in 1994. The primary goal was to collect baseline data on passerine species to compliment existing knowledge of grassland nesting ducks and shorebirds for the eventual development of measurable habitat objectives. New habitat objectives will incorporate the concept of biological diversity while assuring management activities are compatible with the primary purpose of the refuge,..."as a refuge and breeding ground for birds".

Funding received in 1996 from the MOYOCO Ecosystem allowed for continue refuge monitoring and Benton Lake Wetland Management District monitoring.(See WMD Narrative).

Bird monitoring was conducted at 53 point count stations on nine transects located in native prairie grasslands. Three observers conducted the counts twice from May 16-17th and June 20-21st. Daily point count censuses began within ½ hour of sunrise and lasted 3-4 hours. During a ten minute period at each point a single observer recorded each bird detected including species, sex (if known), detection type(visual, singing, calling, flyby, etc), distance, time and weather conditions.
1995

A total of 571 individuals and 25 species were detected during the first point count census at Benton Lake NWR. Of this total, 369 individuals and 13 species were detected within 100 m from the station center. During the second census, a total of 624 individuals and 32 species were detected. Of this total, 405 individuals and 9 species were detected within 100 m of the station center. Chestnut-collared Longspurs were the most frequently detected species, with 166 detections during the first census and 144 during the second. Savannah Sparrows were the second most frequently detected species, with 109 detections during the first census and 135 during the second.

Comparing relative abundance of the three most common species between 1994, 1995 and 1996, we found that the average number of CCLO's per point decreased steadily from an average of 3.7 in 1994, to 3.45 in 1995, to 2.9 in 1996. The average number of SAVS's decreased from 2.2 per point in 1994 to 1.9 in 1995, then increased to 2.3 in 1996. WEME's also showed a decrease from 0.76 per point in 1994 to 0.55 in 1995, then increased to 0.66 in 1996.



Biological Technicians Bob Jordan and Meghan Piercy were the principle investigators for non-game bird studies on the refuge and Wetland Management District. See D.5

SJM **9/96**

E. ADMINISTRATION

1. Personnel

There were no personnel actions related to permanent staff in 1996. In August, **Tim Tiplady**, biological technician in the Partners for Wildlife Program at Dillon, MT, accepted a permanent appointment as an aircraft pilot with the Office of Migratory Birds in Anchorage, AK. We miss Tim's enthusiasm and good humor, but, it sounds like he is greatly enjoying the Great Land.

In December, **Mindy Meade**, contaminants program biological technician was converted from a temporary one year appointment to a term appointment and promoted to GS-6.

Robert Jordan was re-hired March 31 on a seasonal temporary appointment as a biological technician. Bob worked on a variety of refuge activities including nest searches, predator trapping, computer data entry, YCC supervision, etc. **Meghan Piercy** began work on June 6 as a seasonal biological technician. Her primary duties were non-game migratory bird monitoring, conducting point counts, vegetation sampling, and summarizing data for the non-game bird survey report. Both Bob's and Meghan's appointments expired at the end of September.

Table II indicates the staffing level at the Benton Lake office since 1990 while Table III lists staff assigned to the Complex in 1996.

TABLE II

STAFFING LEVELS AT BENTON LAKE NATIONAL WILDLIFE REFUGE,
BENTON LAKE WETLAND MANAGEMENT DISTRICT,
AND MONTANA PARTNERS FOR WILDLIFE, 1990-1996

Fiscal Year	Permanent	Term, Temporary Or Seasonal	YCC	Total FTE's
1996	8	5	3	11.5
1995	8	5	3	12.13
1994	9	4	2	12.2
1993	9	4	2	10.7
1992	9	1	2	9.3
1991	8	1	2	8.3
1990	6	2	1	7.2

TABLE III

PERSONNEL ASSIGNED TO BENTON LAKE NATIONAL WILDLIFE REFUGE, WETLAND MANAGEMENT DISTRICT AND MONTANA PARTNERS FOR WILDLIFE 1996

Name	Position	Grade	EOD	Depart
		Permanent Staff		
Gale F. Brewer	MaintWorker	WG-8	10/03/92	
Robert F. Johnson	RefOprSpecialist	GS-9	04/21/91	
Stephen J. Martin	AsstProjLdr	GS-11	01/29/89	
James E. McCollum	ProjLeader	GS-12	06/12/91	
Gregory A. Neudecker	WildlfBiol	GS-9	04/07/90	
Jacqueline Rea	AdminAsst	GS-6	06/25/95	
James Stutzman	WildlfBiol	GS-13	01/12/92	
Gary L. Sullivan	RefOprSplst	GS-11	02/01/87	
		Term & Temporary Staff		
Randall J. Gazda (Term)	BioTech	GS-5	10/04/94	
Robert Jordan (Temp)	BioTech	GS-5	03/06/95	09/30/96
Melinda Meade (Term)	BioTech	GS-5	05/15/95	
Meghan Piercy (Temp)	BioTech	GS-5	05/08/95	09/30/96
Tim Tiplady (Term)	BioTech	GS-6	02/08/93	08/18/96
Kathleen Colenso	YCC		06/10/96	08/17/96
Esther J. Campbell	YCC		07/01/96	08/17/96
Joe A. Metcalf	YCC		07/01/96	08/17/96

2. Youth Programs

Again in 1996 the refuge hosted three Youth Conservation Corps enrollees beginning June 10. They were Kate Colenso, Esther Campbell and Joe Metcalf, all of Great Falls. Kate worked as an enrollee in 1995 and returned this year as a group leader. Their assistance during the summer on nest searches, duck banding, botulism patrol, weed control, and numerous other refuge and WMD projects was of substantial benefit to the refuge work program..

4. Volunteer Programs

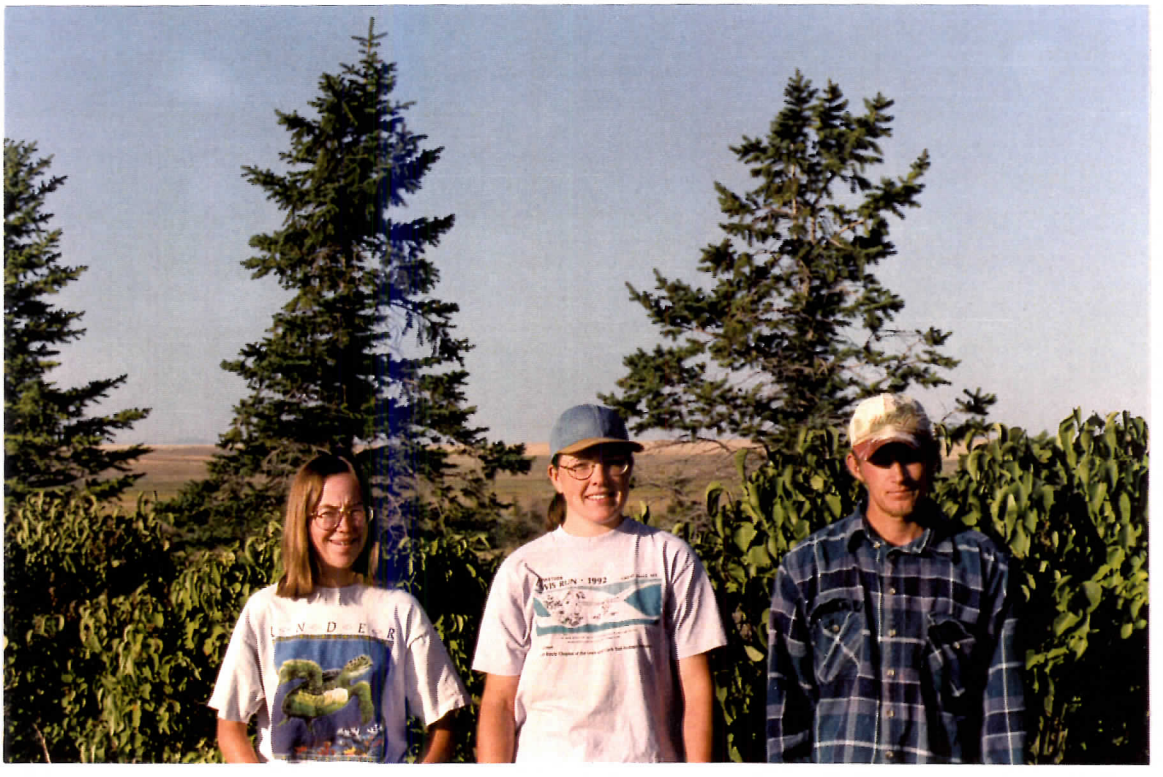
Fifteen volunteer's contributed 625 hrs to the refuge biological program during 1995. Christy Raffa, a student from Hocking College, in Ohio, spent two and half months on a volunteer project studing White-faced Ibis nesting. Christy's work documented that Benton Lake contains the largest known nesting colony of White-faced Ibis in Montana.

5. Funding

Benton Lake receives one budget allocation to cover three activities at this Complex; funding for the Refuge, Wetland Management District, and Partners for Wildlife are consolidated into one distribution. Appropriated funding in 1996 was not sufficient to accomplish the essential refuge operations and maintenance programs; funding for Partners for Wildlife activities was adequate. The following tables provide a summary of overall funding levels for the past 5 years and how those funds were expended by subactivity in 1996.

The Benton Lake Complex staff enjoyed learning how to use the new phone system. The phones were later moved to individual offices, after the cords were untangled. Clockwise left-right, Meade, Gazda, Johnson, Martin, McCollum, Stutzman, Sullivan, Neudecker, Rae, Brewer and Jordan.

SJM 5/96



The 1996 YCC crew (L-R), Ester Campbell, Kate Colenso-Work Leader and Joe Metcalf.
MLM **5/96**

Volunteer Christy Raffa, a student at Hocking College, spent two months on a White-faced Ibis nesting study. Christy, in this photo examines nest No.86 which contained 3 ibis chicks and one egg.
RJJ **6/96**

TABLE IV

ANNUAL FUNDING FOR THE BENTON LAKE REFUGE/WMD COMPLEX
1992 - 1996

Subactivity	1996	1995	1994	1993	1992
Refuge/WMD	460,095	536,994	674,775*	521,500@	564,570#
Partners for Wildlife	580,000	738,900	626,250	400,000	340,000
Totals	1,040,095	1,275,894	1,301,025	921,500	904,570

* - included $69,000 in funds controlled by Regional Office and expended by other stations.
@ - included $55,000 in funds controlled by Regional Office and expended by other stations.
# - included $108,200 in funds controlled by Regional Office and expended by other stations.

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TABLE V

FUNDS AVAILABLE BY SUBACTIVITY
IN FISCAL YEAR 1996

Subactivity	Fund Target
1121 PFW Private Lands (PFW)*	510,000
1230 Migratory Birds (PFW)	70,000
1261 Refuge Operations (Ref)	365,250
1261 Challenge Grant (Ref)	17,500
1262 Refuge Maintenance(Ref)	17,000
1262 Refuge MMS (Ref)	29,880
2696 Drought Assistance - BOR (Ref)	18,535
8610 Quarters Maintenance (Ref)	10,130
9110 Fire Preparedness (Ref)	1,800
TOTALS	1,040,095

* PFW = Partners for Wildlife Program
  Ref = Refuge Program

6. Safety

Safety meetings were held quarterly. There were no injuries or accidents during the year.

7. Technical Assistance

Most refuge related technical assistance was with the Natural Resources Conservation Service and Montana Salinity Control Association related to watershed water quality efforts. Inter-agency cooperation continued in dealing with contaminants in the Benton Lake, Lake Creek and Muddy Creek watersheds. Refuge staff also attended several meetings related to erosion control activities in Muddy Creek.

8. Other Items

The fiscal year 1997 budget disfugilty between the President and Congress which resulted in the government-wide shutdown of operations in early January resulted in what appeared to be a paid vacation for most of the staff. Being hung on tenter hooks for two weeks in mid-winter certainly did not feel like a holiday to those experiencing it.

F. HABITAT MANAGEMENT

1. General

Future habitat management that addresses the issues of, purpose of the refuge (ie enabling legislation), compatibility of activities, the role of NWR's in the FWS Ecosystem Approach to Management and Comprehensive Management Plans will require a better understanding of refuge wildlife and their associated habitats. (See G.1 for wildlife efforts). Utilizing existing knowledge and expanding our knowledge will be essential in developing goals and measurable objectives for habitat management.

The development of measurable habitat objectives is contingent on the identification of habitat subtypes and mapping of refuge vegetation. Presently the refuge has limited habitat data and the refuge has never been adequately cover mapped. Wetland habitat data, for example, is limited to basin size but the cover types present are unknown.

Work continued on cover mapping wetland vegetation in marsh IVc using color and color IR 35mm aerial photography of the refuge taken in 1994. We attempted to classify and map wetland vegation on color copy 8X10 elargements of 4x5 prints. From scaled enlargements we delinated cover type of six wetland types and measured the area of each to estimate area. Results included the following acreages, Foxtail Barley = 508, Alkali Bulrsuh = 276, Upland grass = 124, Cattail = 127, Open watewater = 37 and Hardstem Bulrush = 12. The total acreage of the six types was 23% less than the known marsh acreage. This discrepancy is unexplained but we now have some idea of the composition and distribution of these wetland types.

2. Wetlands

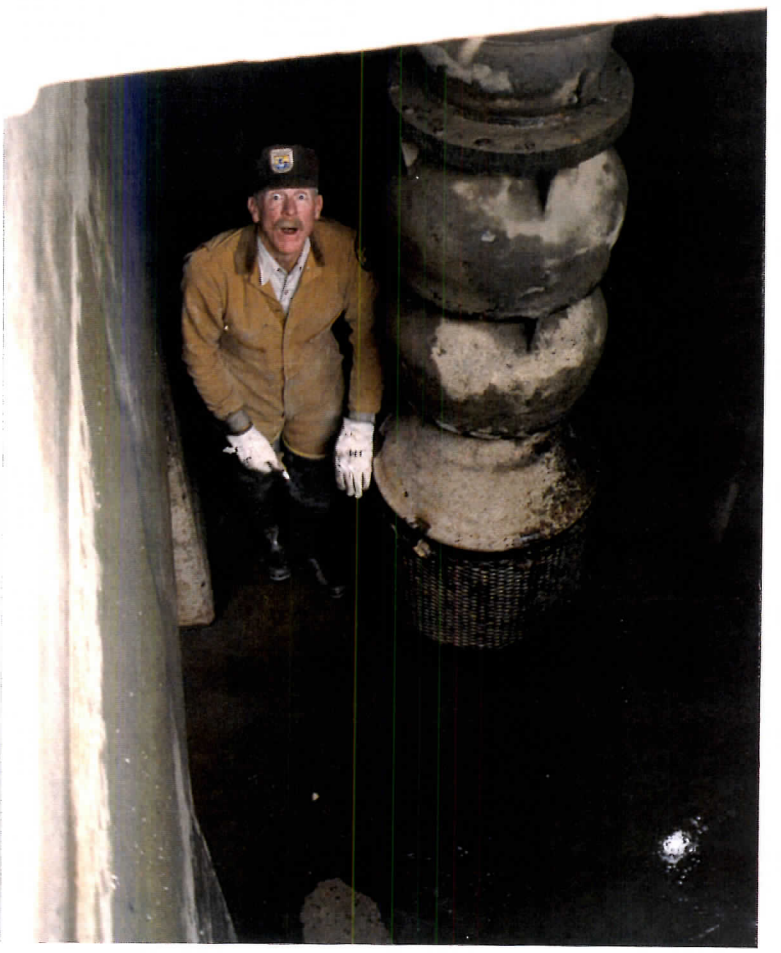
Poor snowpack and the lack of spring rains resulted in little runoff to the refuge. Runoff based on the USGS gaging station on Lake Creek totaled 656 Acre Feet (AF). This compares with 344, 227, 2979 and 21 AF in 1995, 1994, 1993 and 1992 respectively. Average annual runoff in the last 19 years is 3550 AF. An additional 190 AF of runoff was received from other refuge tributaries.

Pumping supplemental water from Muddy Creek/Greenfield Irrigation District began on April 17th and continued until June 13th. Pumping resumed on August 21st and continued until October 28th. Pump problems developed with the No.3 pump which prevented delivery of maximum potental water volumes during the pumping season. Pumped water was distributed to seven of the eight marsh units. When completed a total of 3969 AF were pumped at a cost of $39,798 (electricity) or $10.02/AF.

At year's end the refuge marshes contained 428 AF less water than in January. Refuge water totaled 3590 Surface Acres (SA) (2324 AF) in December compared to 3571 SA (2752 AF) in January.

The following contains a brief description of water management and wildlife use for the eight refuge marshes. Species of Special Concern are underlined(See G.1)

Unit I receives all pumped water, most runoff and consequently water levels remained fairly constant throughout the year. March and April runoff and May and June pumped water was



"Don't you dare turn on the value!" Manager Jim McCollum yells from the well of the pump station. Shut down and clean-up of the Muddy Creek Pump Station is an annual pre-winter activity.

SJM **10/6**

retained briefly and then transferred, via gravity, to Unit II and then to other units.

Spring habitat supported 3500 Tundra swans, in late March and early April, and 750+ diving ducks, primarily Common Goldeneye and Canvasback. High quality nesting habitat was available for species such as Ruddy Duck, Eared Grebe, Black-crowned Night-heron, Sora, Marsh Wren and Common Yellowthroat. Black Tern and Forster's Tern nesting was suspected although no nests were found. Black Tern were frequently sighting feeding over the marsh with peaks of 25 on May 22nd and 52 on July 29th.

Two-hundred sevety-five AF of pumped water in August and September provided habitat for migrating waterfowl. White goose numbers were lower than normal with a peak of 1000 birds in October compared to 10,000 in 1995. Tundra swans peaked in late October with 1,200 birds.

Unit II water management is similar to Unit I since it also receives all water that discharged from Unit I. Water levels provided habitat for spring migrant waterfowl including 2500 Tundra Swans, a thousand Northern Pintails and 700 Common Goldeneys in late March. Foraging habitat was provided for American White Pelicans, White-faced Ibis and Black Terns and nesting habitat for Forster's Tern and Black-crowned Night-heron.

Late summer shorebird numbers reached 5000 birds including 2500 Long-billed Dowitcher, 1000 sandpipers, 500 Yellowleggs and 500 Red-necked Phalaropes. Fall use was highlighted by 25,000 ducks, primarily Mallard, and 9 Bald Eagles. Fall pumping provided only 60 AF, 100+ AF less than planned due to pump problems.

Unit III received 53 AF of runoff\rain in April and an additional 200 AF of pumped water in May provided habitat for migrating and nesting waterfowl and shorebirds. Black-necked Stilts and American Avocets nested in the marsh with peak numbers of 106 and 150 respectively. A Trumpeter Swan spend several days in the unit in early April. Natural drawdown during the summer kept botulism losses to a minimum, only two dead birds were found. Fall pumping offset some of the loss but were 450+ AF less than planned.

Unit IVa received a trace of runoff and 49 AF transferred from Unit II in May and an additional 22 AF of runoff in June. Spring habitat was ideal for duck pairs especially Northern Pintails. Late April drawdowns provided habitat for migrant and breeding shorebirds. Shorebird numbers peaked at 1700 on May 20th including 900 Long-billed Dowitchers, 300 Yellowlegs, 250 Wilson's Phalarope, 17 Long-billed Curlews and 16 Black-bellied Plovers. Species of Special Concern use were highlighted by 100+ foraging White-faced Ibis and 115 Black-necked Stilt in mid-May.

Planned transfers from Unit II in late summer to provide habitat for migrating shorebirds were modified due to the loss of one 350 hp pump during most of the fall pumping season. Fall pumping delivered 200+ AF of water which provided ideal habitat for migrant waterfowl and shorebirds highlighted by 1000 Dowitchers and 250 Wilson's Phalarope.

Unit IVb plans were modified in mid-year with a decision to modify the two duck nesting islands that have been colonized by California and Ring-billed gulls. The nesting gull population has grown from 69 nests in 1988 to over 3000 in 1995. A nest search for California Gulls in mid-May found 1225 and 18 nests on the east and west island respectively. Gull predation on nesting birds and their young is believed to have increased significantly due to the expanding gull population. To discourage gull nesting the height of each island will be lowered to 18-24 inches allowing flooding of the islands in early spring

prior to gull nest initiations. A summer drawdown dried the marsh basin to allow the use of heavy equipment. Force account work began in late summer with the removal and stockpiling of island rip-rap. Work is expected to continue through the fall of 1996 and winter of 1997.

Unit IVc received 400+ AF of water in the spring which provided wetland habitat that was conducive to Franklin's Gulls (N=2000) and Black Terns (N=???nests) that nested in alkali bulrush. Cattail stands provided nesting habitat for nesting Black-crowned Night-herons (N=?? nests) and White-Faced Ibis(N=102 nests).

Plans to transfer pumped water in August were postponed to the threat of botulism, consequently the marsh was nearly dry by Septemeber 1st. Shorebird use in early August included 100 Western and 50 Stilt Sandpipers. Fall pumping delivered 500+ AF to help accommodate the fall waterfowl migration and hunting season. Year end levels were 450+ AF below those planned.

Unit V received 500+ AF from March-April and 100+ AF in May and June. Spring habitat was conducive to snow geese with a peak of 10,000 birds on March 15th. Late spring and summer levels provided duck brood habitat and nesting habitat for Forster's (N=14 nests), Common(N=6nests) and Black Terns(N=11nests) and Black-necked Stilts (N=4+nests)Stilt numbers peaked at 164 (including 15 chicks) on July 7th. Peregrine falcons also frequently were sighted near this unit in pursuit of ducks and shorebirds.

During late summer and early fall this unit was nearly dry and consequentely shorebird habitat was ideal. Shorebird use was highlighted by 900 Long-billed Dowitchers, 550 Lesser Yellowlegs, 420 Marbled Godwits, 200 Pectoral Sandpipers, 400 Western Sandpipers, 150 Stilt Sandpipers and a record number of 137 Long-billed Curlews. Year end levels were 300+ AF less than those planned due to fall pump problems. Minor botulism losses occurred, during July and August, with a total of 18 dead birds found.

Unit VI received 400+ AF from March-June. Early-spring use was highlighted by 2500 Northern Pintails on March 15th. Spring and early summer nesting habitat supported waterfowl, Franklin's gulls, Black-Necked Stilts and Forster's and Black Terns(N=4 & 5 nests, respectively). Franklin's gulls, nested again this year in a large colony (N= 10,000+) located in alkali bulrush in the northwest portion of the marsh.

Late summer shorebird habitat supported 3500+ birds including 2200 Long-billed Dowitchers on August 27th. Pumped water in September and October provided 375+ AF for waterfowl migration and the refuge hunting program. Botulism losses in August totaled 39 birds. End of year water levels were 375+ AF less than planned.

8. Haying

Ninety-two acres in three fields of dense nesting cover were hayed in late July as a part of an on-going DNC rejuvenation effort. At 100 acres per year, it will take from seven to 10 years to cycle the approximately 700 acres of DNC through some manipulative management practice. No management practices were conducted on DNC in 1995. The north one third of DNC field 2 and the north half of DNC field 4 were hayed. In DNC field 3 where strips of DNC alternate with strips of native grassland, 6 strips totaling about 25 acres was harvested.

This year, a bid notice was mailed to all refuge neighbors and others who had in the past indicated interest in refuge haying. Only two persons indicated interest by bidding. A bid of $8.47 per acre was accepted from Ron Lee. It was apparent that the permissive haying of Conservation Reserve Program acreage on many farms reduced interest this year in haying on the refuge.

A free permit was issued to refuge neighbor Mark Shane to cut hay along the Bootlegger Trail, a county road that bisects the refuge. Shane cut and baled four miles of the right-of-way beginning July 15. This haying is a routine highway maintenance activity to help prevent blowing and drifting snow accumulation on the road during the winter. Haying is delayed until mid-July when nearly all ground nesting birds are finished nesting.

9. Fire Management

Only one prescribed burn was conducted. About one mile of the northwest end of the 5/6 dike totaling about 12 acres was burned on April 12. The purpose of the burn was to remove an accumulation of old dead matted vegetation, control an increase in cheat grass and clear the dike top of vegetation in preparation for grading and leveling of the dike. The burn was successful in all respects. One unintended consequence of the burn was the bare dike top was suddenly very attractive to california gulls. Numerous nest bowls were constructed by them and a few eggs were laid. Repeated patrolling of the dike by refuge staff for a couple of weeks was sufficient to discourage them from their aspirations.

Two wildfires occurred on the refuge this year. The largest fire, human caused, burned 60 acres east of Bootlegger Trail on April 25th.(See photo). Impacts of the fire included the destruction of one Northern Pintail nest.

A smaller refuge wildfire occurred on April 24th in native prairie along the southwest boundary. A lighting strike was the cause of the fire but accompanying rain extinguished the blaze after burning about .1 acre (See photo).

Refuge staff responded to two additional wildfires adjacent to but off the refuge. The Teton Ridge Fire was lightning caused and burned less than 0.25 acre. The Blackhorse Lake Fire was a 100+ acre human cause blaze in grassland about 2 miles southeast of the refuge. One refuge engine and crew responded under the mutual aid agreement with Cascade County and assisted in mop-up operations.

10. Pest Control

A few leafy spurge (Euphorbia esula) plants were found on the refuge this year. Spurge plants have been found in the past along the Prairie Marsh Drive near marsh unit 1 where seed was apparently delivered in new road gravel several years ago. Two new plants were found behind the refuge shop. Aggressive treatment has prevented spurge from seeding in locations. Canada thistle (Circium canadense) at scattered locations along the refuge entrance road and at headquarters was hit once with Curtail. Annual treatments have substantially reduced this plant in these areas. There are several areas along Bootlegger Trail where spotted knapweed (Centaurea maculosa) occurs. All those sites were spot treated prior to or during flowering. Progress is slow in removing this invader because it seems to be regularly replanted by traffic along the highway. Musk thistle (Carduus nutans) is scattered in several sites totalling about five acres. It was treated with Curtail at the pump

A lightening strike ignited a wildfire that burned ½ acre of native prairie along the west boundary of the refuge. Rain that accompanied the storm extinguished the blaze shortly after ignition.
SJM **4/96**

A human caused wildfire burned 60 acres of native prairie on April 26th along the Bootlegger Highway that bisects the refuge.
MLM **4/96**

Jim McCollum and Bob Johnson discuss mop-up of the Outlet Wildfire. The fire started adjacent to the Bootlegger Trail was obviously of human origin but the exact cause could not be determined.

JEM 4/96

site while on the refuge it was pulled by hand prior to seed maturity. Hoary Cress/white top (Cardiria draba) found in several sites along the Lake Creek canal west of the refuge was treated to prevent seed from being carried into the refuge by stream flows. Chemical control efforts are summarized below.

Location	Target Species	Acres	Chemical/Acre
Prairie Marsh Drive Headquarters	Leafy Spurge	.01	
Refuge Hdqtrs, Entrance Road	Canada Thistle	.5	2 quarts Curtail
Lake Creek	White Top	.5	1 oz Escort
Muddy Creek Pump Station	Musk Thistle	.2	2 quarts Curtail
Muddy Creek Pump Station, Bootlegger Trail	Spotted Knapweed	1.45	2 quarts Curtail

11. Water Rights

The Water Resources Division in the Denver Regional Office initiated negotiations this year with the Montana Federal Reserved Water Rights Compact Commission over federal reserved water rights for the refuge from the Benton Lake watershed. Several meetings were held between Service staff and the Commission staff to negotiate provisions and conditions of a proposed compact. A local public meeting was held a Power, MT, to provide information to the public and receive public input. By year's end the effort had resulted in agreement that the basin would be closed to new appropriations of water, the Service would only accept future construction stock water facilities up to 15 acre feet and that the Service could claim all other surface run-off. Essentially, the agreement froze in place the status quo of 1996. The compact must be submitted to the 1997 Montana State Legislature for ratification. No opposition is expected.

G. WILDLIFE

1. Wildlife Diversity

Implementing management practices that support the concept of species diversity requires baseline data for wildlife and their associated habitats (See F.1). Baseline data is also crucial to the FWS Ecosystem Approach to Management, Comprehensive Management Planning and assessment of refuge compatibility issues. Existing baseline data for Benton Lake is extensive for duck nesting including Mayfield success and densities in four major habitat types. Data for non-waterfowl species is less extensive although all refuge bird sightings records are stored in computer database containing 7526 records from 1929-96.

Efforts to expand baseline wildlife data were initiated in 1994 and continued this year. The focus of our efforts is on birds since the refuge enabling legislation identified the purpose of Benton Lake as a "refuge and breeding grounds for birds".

Work this year included the monitoring of non-game birds in native prairie (See D.5) and data collection on bird species identified by the Montana Natural Heritage Program (MNHP) as Species of Special Concern(SSC).

SSC include those protected by the ESA, candidate species and species that the MNHP considers at risk because of declining numbers, rarity or those with limited distribution in Montana. SSC data was collected this year on species that nest on the refuge including; Ferruginous Hawk (G.6), Burrowing Owl (G.6), Black-crowned Night-heron (G.4), White-faced Ibis (G.4), Franklin's Gull, Black, Common and Forster's terns (G.5), Black-necked Stilt (G.5), Loggerhead Shrike (G.7) and Baird's Sparrow (G.7). Non-nesting SSC include; Bald Eagle (G.2), Peregrine Falcon(G.2), Northern Goshawk (G.6) and American White Pelican (G.4)

2. Endangered and/or Threatened Species

Peregrine falcons were sighted twenty-six times this year. Single birds were sighted twice in April, 11 times in May, 6 times in June, once in July, 4 times in August and twice in September. The presence of peregrines on the refuge from April-September in 1995 and 1996 suggests the possibility that peregrines maybe nesting in the vicinity of the refuge.

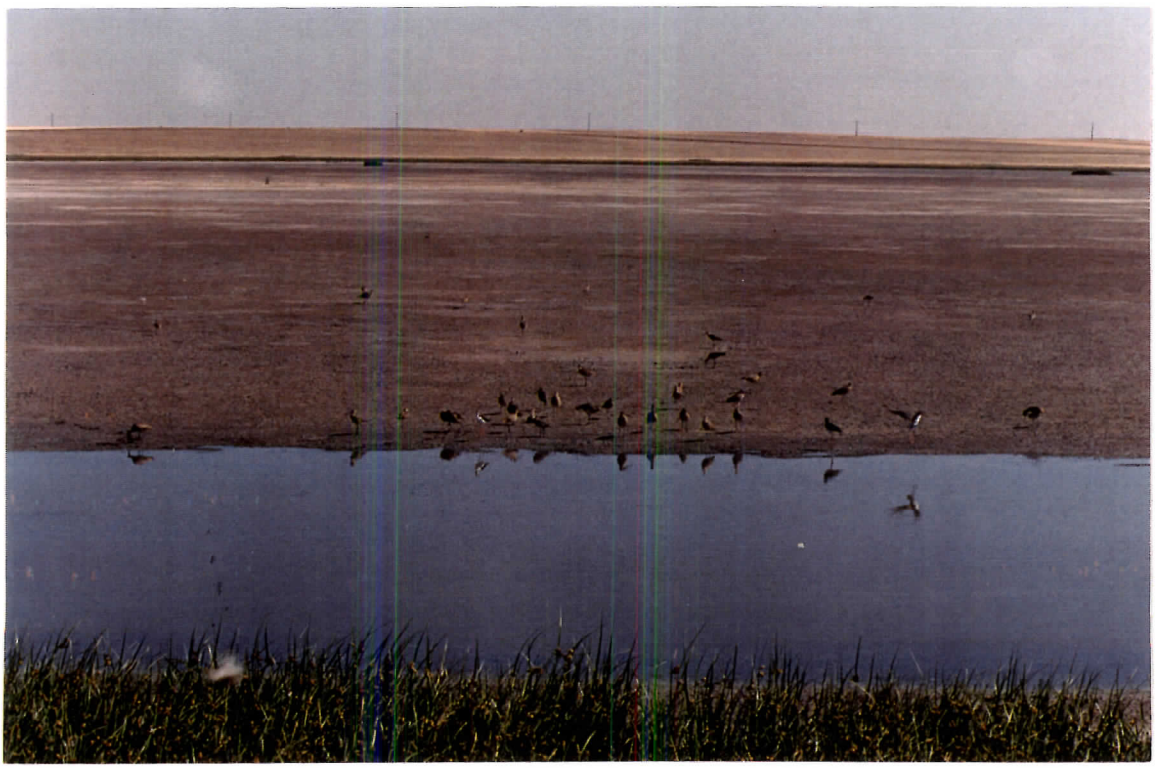
Bald eagles were sighted nine times this year compared to eleven in 1995. Two sighings occured in March and 7 in October and Novmeber. Peak numbers occured on October 21st with 2 adults and 7 immature birds present.

3. Waterfowl

Ducks

Mallards and Northern Pintail began arriving in mid-February and peaked in early April with 3150 and 12,350 respectively. Fall duck numbers peaked in late October with 30,000 mallards.

Fall Bald Eagle numbers peaked at nine in October including these three immature birds.
SJM 10/96



Shorebird habitat was abundant during late summer and early fall due to low water levels. Long-billed Curlews, Marbled Godwits and Black-necked Stilts were especially abundant.
SJM 9/96

Dark Geese

Canada goose numbers in January and February ranged from 280-1000 birds. Nesting began in mid-March and the first brood was seen on May 13th. Goose production based on 300 pairs was an estimated 600 goslings to flight stage.

Fall migration numbers peaked on September 16th with 1300 birds. The last flock of the year sighted on December 9th contained 280 birds.

White Geese

Snow geese began arriving in mid March and peaked at 10,000 on April 26th. Ross' geese were first sighted on April 9th and peaked with 1200 on the 12th. Fall migrants began arriving in early October and peaked at 3000 in November. Few Ross' were sighted during the fall with a peak of only 50 birds on November 6th.

Swans

Tundra swans began arriving on March 10th and peaked at 5125 on the April 2nd. Two swans arrived early in the fall on September 23rd and numbers peaked at 2500 on October 21st. Fall departures were early this year with over 3200 swans departing 2-3 days prior to an arctic cold front. The last swans of the year, 90, were seen on November 16th

The first sighting record for Trumpeter Swan occurred in April when two swans wearing green neck collars were sighted. The birds appeared to be unpaired and departed the refuge by April 12th. The only previous Trumpeter record for the refuge were swans heard by a refuge staffer on March 18th, 1986.

4. Marsh and Water Birds

Marsh and water birds known to nest on the refuge include Eared Grebe, Pied-billed Grebe, Western Grebe(none in 1996), Black-crowned Night Heron, Double-crested Cormorant, Sora and Virginia Rails (breeding suspected) and White-faced Ibis.

Uncommon marsh bird visitors this summer included two Snowy Egrets. A single egret was sighted on June 24th and six times through July 19th. Two birds were sighted on June 27th and July 3rd.

White-faced Ibis (WFIB): WFIB began arriving on April 29th. The average arrival date since 1987 is April 22. A formal nest survey of the refuge WFIB population was conducted by Volunteer Christy Raffa. A total of 103 ibis nest were found, the largest known nesting population of WFIB in Montana.

Black-crowned Night-heron (BCNH): Ten to fifteen BCNH nests were found incidental to the WFIB study.

American White Pelican (AWPE): AWPE's arrived this year on April 7th. Three to nine birds and 7-23 were present in April and May respectively. Most birds were in non-breeding plumage, although several breeding birds were seen for several days in mid-April. Pelican nesting has never been documented at the refuge but a large breeding colony nesting is located in the Wetland Management District at Arod Lake WPA (WMD Narrative G.16).

5. Shorebirds, Gulls, Terns, and Allied Species

Shorebirds

Benton Lake is one of two Region 6 refuges recognized as a regional site by the Wetlands For Americas, formally The Western Hemisphere Shorebird Preserve Network. Work continued this year to identify shorebird use by species, arrival dates, seasonal use and peak population estimates. Summarized data for breeding and non-breeding species are contained in the following tables. Shorebird use related to water management is contained in Section F.2.

BREEDING SHOREBIRD ARRIVAL DATES BY SPECIES, PEAK NUMBERS AND DATE 1996

SPECIES	ARRIVAL DATE	PEAK NUMBER	DATE
Wilson's Phalarope	4/29	750	8/09
American Avocet	4/02	325	5/02
Black-necked Stilt	4/08	270	7/24
Marbled Godwit	4/16	420	7/19
Willet	4/22	245	8/19
Killdeer	3/25	32	7/24
*Upland Sandpiper	5/08	17	6/20
Spotted Sandpiper	5/13	2	8/19
**Long-billed Curlew	4/09 (7/24)	137	8/09
***Common Snipe	4/29	1	4/29

*Number detected on grassland point counts (6/20-21).
**Nesting by Long-billed Curlews last documented on the refuge in 1983.
*** Common Snipe nesting is suspected but no nests have been documented.

NON-BREEDING SHOREBIRDS USE DATES AND PEAK NUMBERS DURING SPRING AND FALL MIGRATION, 1996

SPECIES	SPRING USE	PEAK	FALL USE	PEAK
Long-billed Dowitcher	05/08-22	900-May 20	07/10-10/15	4200-Aug 27
Greater Yellowlegs	06/26	1-June 26	07/17-10/15	280-Aug 19
Lesser Yellowlegs	05/20	1-May 20	07/10-10/23	716-Jul 19
Red-necked Phalarope	05/13	20-May 13	07/18-08/27	1000-Jul 18
Baird's Sandpiper	--------	----------	08/09-09/25	150-Aug 09
Pectoral Sandpiper	--------	----------	09/20-10/15	210-Sept 24
Stilt Sandpiper	05/22	30-May 22	07/19-08/27	200-Aug 09
Solitary Sandpiper	--------	----------	08/09-08/19	2-Aug 09
Western Sandpiper	--------	----------	07/16-08/27	700-Aug 09
Semipalmated Sandpiper	--------	----------	07/17-08/27	50-Jul 19
Least Sandpiper	--------	----------	08/12-09/24	10-Sept 24
Sanderling	--------	----------	08/19-09/24	107-Aug 19
Whimbrel	05/22	1-May 22	----------	--------
Black-bellied Plover	05/16-28	16-May 22	08/09-09/24	19-Aug 19
Semipalmated Plover	05/07	1-May 7	07/17-09/29	3-Sept 29
Ruddy Turnstone	--------	----------	08/09	1-Aug 9
UID Small Shorebirds	05/22	150-May 22	08/09	740-Aug 9
UID Large Shorebirds	--------	----------	08/19	1775-Aug 19

Black-necked Stilt(BNST):BNST's average arrival date in the 17 years is April 26. Stilts arrived, three days earlier than the average, on the 23rd of April. Formal nest searches were not conducted but nesting was thought to occur in six of eight refuge marshes. Stilt use is also included in discussions of water management and wildlife use(See F.2).

Gulls

An estimated 3000 pairs of California and ring-billed gulls nested again on one of two duck nesting islands built by Ducks Unlimited in 1986. Formal surveys on May 15th located 1225 and 18 California Gull nests on the east and west island respectively.

The impact of gull predation on young of the year migratory birds is unknown but incidental observations of gull predation is increasing. Records of gull predation include, two ducklings found in a CAGU nest(1990), adult CAGU killing and eating a gadwall duckling(1991), CAGU taking American Avocet chick, CAGU taking Gadwall duckling(1994). Observations in 1995 included a CAGU with a dead Canada Goose gosling and a CAGU attacking a fledgling willet. No gull predation was reported in 1996 but the refuge received photos of CAGU predation on Gadwall ducklings taken by a refuge visitor in 199

To discourage future gull nesting the refuge began efforts to modify the two DU islands. (See F.2).

Franklin's Gull(FRGU): Benton Lake is the site of Montana's largest breeding population of FRGU. FRGU arrived this year on April 6th, four days later than the 18 year average date. Nesting occured again this year in marsh units VI and IVc. Formal nest searches were not conducted but best guess estimates include 10,000 and 2000 in VI and IVc respectively.

California gull predation on a duckling brood was photographed by a refuge visitor on June 11th, 1995. A pair of adult California gulls were able to take an entire brood of four ducklings. The duck species was not known by the photographer but it appears to be a Gadwall or possibly a Mallard. A large nesting population of California and Ring-billed Gulls on the refuge poses a threat to numerous young-of-the-year migratory birds including waterfowl and marsh and shorebirds. See G.5.

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6/95

Terns

Black Tern(BLTE): BLTE's arrived on May 16th this year one day earlier than 1995. The average arrival (ie earliest known) date for BLTE's since 1985 is May 17th. A total refuge nest search was not conducted but 11 nests were found in Unit V. Nesting was also confirmed in VI where 5 nests found. Nesting was also suspected in Unit I and III.

Forster's Tern(FOTE): FOTE's arrived on May 6th this year compaired to May 7th and 3rd for 1994 and 1995 respectively. Eighteen nests were found including 14 in V and 4 in VI.

Common Tern(COTE): COTE's arrived on May 21st. Nesting occurred on at least one islands in Unit V. Six nests with 2-4 eggs were found on June 10th.

6. Raptors

Raptors confirmed nesting on the refuge this year included American Kestrel, Swainson's Hawk, Northern Harrier, Burrowing Owl, Short-eared Owl and Great-horned Owl(See photo).

Other raptors sighted included Bald Eagle and Peregrine Falcon (See G.2), Golden Eagle, Osprey, Prairie Falcon, Merlin, Gyrfalcon, Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Ferruginous Hawk, Red-tailed Hawk, Rough-legged Hawk, Osprey, and Long-eared Owl. A Long-eared Owl sighted in the headquarters shelterbelt, on October 22nd, was the 5th record for the refuge.

Northern Goshawk(NOGO) occasionally visit the refuge during the fall or winter. Sightings this year included a single bird on March 2nd, March 28, April 1st and December 10th.

Ferruginous Hawks(FEHA) nested on the refuge in 1984 on cliffs along the "breaks country" in the SE corner of the refuge. The refuge slide file contains photos of the nest with two downy young. The historic nest site on the refuge was unoccupied in early June. FEHA arrived this year on March 15th and a pair of birds were sighted on several occasions in May feeding on Richardson Ground Squirrels. This pair are presumed to be the same pair that built a nest and fledged 3 young from a cottonwood tree 1 1/2 miles south of the refuge.

Burrowing Owls(BUOW) arrived on March 12th the earliest known arrival date for the refuge. Three pairs of owls nested on the refuge this year and successfully fledged young.

7. Other Migratory Birds

New refuge sighting records included the Black-throated Sparrow and Black-capped Chickadee. The Black-throated Sparrow, a rare vagrant visitor to Montana was sighted by two visiting ornithologist on June 13th. The bird, a singing male, was first heard and then sighted along the refuge entrance road. Although common in the area the sighting of two black-capped chickadee's on October 17th was a new addition to the refuge bird list.

Baird's Sparrow(BAIS): BAIS, a C2 candidate for listing by the ESA, were detected on refuge point counts last year but none were detected in 1996. Although BAIS were not found during point counts a singing male was observed at two presumed territories along the Bootlegger Trail. The first BAIS was found on May 29th and later another on June 11th. At both sites only a male was detected and efforts to document nesting were unsuccessful.

Great-horned Owls nesting was documented on the refuge for the first time in 1996. Three eggs were laid in early April in a nest occupied by a pair Swainson's Hawks in 1995. When the nest was visited on April 29th neither owl was in the vicinity and the eggs had been destroyed by an unknown predator.

MLM **4/96**

Loggerhead shrike(LOSH). No nesting by shrikes occurred this year compared to 4 and 5 nest in 1994 and 1995 respectively. Shrike sighting were limited to two observations of a single bird in April and May.

Two Breeding Bird Surveys (BBS) were run again this year. Volunteer Karen Stutzman runs the Highwood Route and Manager Martin the Great Falls Route.

8. Game Mammals

Pronghorn antelope were sighted infrequently this year. A group of five antelope spent several days in early May on the 40 acre burn east of the Bootlegger Trail and a buck and doe and fawn were sighted in the same vicinity in mid-September.

Record numbers of White-tailed deer were present throughout the year. Winter numbers peaked in December with 83 animals primarily in marsh Units I, II and III. The increased deer population is likely related to extensive tracts of grassland cover on private lands enrolled in the CRP program of the 1985 Farm Bill. (See G.10)

A herd of 10-12 Mule Deer were observed throughout the year in the "breaks country" located in the southeast corner of the refuge. Nine deer were sighted at the 40 acre burn site in late April.

10. Other Resident Wildlife

Resident gamebirds on the refuge include ring-necked pheasant, gray partridge and sharp-tailed grouse. Formal surveys are not conducted for pheasant and partridge but incidental observations indicated an average nest/hatch year.

The sharp-tailed grouse dancing ground (Lek #1) located along the auto tour route was active for the ninth consecutive year. The number of displaying males on each known lek is summarized in the following Table.

YEAR	LEK #1	LEK #2	LEK #3	LEK #4	TOTAL
1996	40	+	12	+	52
1995	43	15	14	10	82
1994	40	6	N/A	N/A	46
1993	40	6	N/A	N/A	46
1992	43	+	N/A	N/A	43+
1991	40	6	N/A	N/A	46
1990	31	9	N/A	N/A	40
1989	12	N/A	N/A	N/A	12
1988	8	N/A	N/A	N/A	8

The expanding grouse population is believed to be a result of land use changes on private lands surrounding the refuge. Thousands of acres of former cropland have been taken out of production and placed in the Conservation Reserve Program (CRP). CRP tracts are seeded to permanent grass cover providing habitat for a variety of wildlife. Sharp-tailed grouse were likely influenced by the increase in grassland cover which provided ideal nesting, brood and winter habitats.

11. Fishery Resources

The refuge has no permanent fish population. Minnows are often pumped from Muddy Creek along with the water delivered to the refuge for marsh management. Usually any fish present are killed each winter when the shallow wetlands freeze to the bottom. Occasionally some of those minnows survive the winter. This year numerous minnows were observed around water control structures in several units.

15. Animal Control

The refuge is authorized to use lethal control for striped skunk and raccoon management. The plan authorizes predator control if duck nest success is less than 60% Mayfield in each of the refuge upland habitat types.

Trapping began on February 21st and continued through July 12th. Removal methods included kill trapping with model 220 conibear traps in wooden cubby box sets and live trapping with cages. Live trapped animals were destroyed by shooting or euthanized with drugs administered with a jab-pole/syringe. Traps were inspected daily and all live trapped non-target animals released. Ten raccoons and five skunks were caught compared to twelve and five in 1995. Table VIII includes the number of animals captured, the month and number of trap nights.

TABLE VIII

NUMBER OF SKUNKS AND RACCOONS TRAPPED, MONTH AND TRAPNIGHTS AT BENTON LAKE NWR, 1996

Month	No. Skunks	No. Raccoons	Trap Nights
February	0	0	
March	1	2	1010
April	1	2	1388
May	1	1	1457
June	2	4	1395
July	0	1	434
TOTAL	5	10	5684

16. Marking and Banding

Preseason Mallard banding was not conducted this year because of water shortages and a minor botulism outbreak that prevented pumped water transfers from Unit I where most banding occurs. Late summer water pumped to Unit I resulted in rising water levels that created conditions unfavorable to duck trapping. The number of mallards banded in the last five years in shown in Table IX.

TABLE IX

MALLARDS BANDED AT BENTON LAKE NWR, 1992-96

Year	AHY-M	AHY-F	HY-M	HY-F	Total
1996	0	0	0	0	0
1995	1149	261	570	296	2276
1994	744	234	635	363	1976
1993	491	211	357	224	1283
1992	329	172	257	192	950
TOTAL	2713	878	614	1075	6764

17. Disease Prevention and Control

Avian botulism losses were detected this year for the first time since 1993 (Table X). Airboat patrols in late July and August detected some dead birds believed to be botulism mortalities. The number of dead birds picked up in each marsh unit included VI=39, V=18, Interunit canal=12, II=8, I=5, III=2 and IVa=1.

TABLE X

BOTULISM LOSSES AT BENTON LAKE NWR, 1992-1996

Year	Number of Dead Birds
1996	85
1995	0
1994	0
1993	0
1992	58

H. PUBLIC USE

1. General

Public use on Benton Lake National Wildlife Refuge is principally wildlife oriented. Public use visits to the refuge this year were estimated at 9,417 compared to 10,370 in 1995. The reduction in visits was due to fewer school children and duck hunters this year. Wildlife viewing, wildlife photography, environmental education and waterfowl hunting are the main activities.

2. Outdoor Classrooms-Students

The refuge annually hosts the Great Falls Public School Environmental Education Program. The program is taught by teachers and includes elements on water, plants, soils and wildlife. Approximately 2000 third and seventh graders visited the refuge this year during May compared to 2800 in 1995.

The refuge hosted an October field trip for a Montana State University (Northern), class on entitled "Biodiversity: Sustaining Ecosystems". Twenty students visited the refuge to learn about wetland ecology and the refuge contaminant program.

5. Interpretive Tour Routes

April through September visits to the Prairie Marsh Drive ranged from 600-960 per month.

6. Interpretive Exhibits/Demonstrations

Benton Lake again coordinated a "Montana Refuges" exhibit and information booth at the Montana State Fair in Great Falls. Fourteen refuge personnel from the seven Montana NWR's staffed the booth from July 27th through August 3rd. The exhibit was housed in the "Natures Den" along with the Montana Department of Fish, Wildlife and Parks, National Park Service, Bureau of Land Management and the U.S. Forest Service. Visits to the exhibits were estimated at 15,000.

Various tours and other programs conducted by refuge staff during 1996 are shown below.

Program/Service	Group	Staff
Judging	-Great Falls Science Fair(2)	Johnson, Jordan, Martin, Gazda, Meade
Refuge talks	-Great Falls Optimus Club	Martin
	-Elementary School Programs	
	-Missouri River Audubon	Martin
	-Skyline Alternative School	Meade
	-Up With People	Martin, Meade, Piercy
	-Camp Francis	Martin

8. Hunting

The refuge opened to public hunting of game birds on September 28, the beginning of the state waterfowl hunting season. Waterfowl populations permitted a liberal 93 day season and 7 duck bag limit. Hunting for ducks extended through December 29 and for geese through January 5, 1997. Despite the favorable regulations, poor waterfowl habitat conditions in the hunting units made for generally poor hunting prospects as the season opened. A dry summer and pump problems at the Muddy Creek pump stations resulted in very shallow to dry hunting areas. A news release prior to opening day explaining the situation resulted in the smallest opening day hunter turn-out in many years. Hunter numbers were estimated at less than 50 on opening day. Although wetland conditions improved in October, ducks continued avoid most of the hunting area throughout the remainder of the season. An earlier than normal freeze-up of the marshes in late October pushed most of the remaining birds out of the area and brought a generally poor waterfowl hunting season to a halt.

Of hunters checked on opening weekend, only 2 to 3 ducks per hunter were bagged. Hunting success did not improve later in the season as it normally does. Few 7 duck limits were checked during the whole season. Permit-only tundra swan hunting began on October 12. Because of the early freeze-up, permittees took only two or three swans during the season. Few geese are taken on the refuge each year because the geese quickly learn to use the sanctuary areas to rest after feeding in grain fields off the refuge. Goose harvest on the refuge in 1996 was estimated at 15 birds.

A shortage of high quality upland bird habitat in the public hunting area results in few upland birds being harvested most years. That was the case again this year with an estimate of only 15 to 20 upland bird hunter visits to the refuge.

11. Wildlife Observation

Each spring a portable blind is placed near a sharp-tailed grouse dancing ground as part of the refuge "Watchable Wildlife" program. This spring the blind was reserved on 51 mornings in April and May compared to 43 times last year. The blind is available on a reservation basis and will house up to four people. Persons wishing to reserve the blind must be prepared to enter the blind one to one-and-a-half hours before sunrise and remain in the blind for at least two hours.

17. Law Enforcement

There were few law enforcement incidents this year. The refuge required a minimal level of enforcement activity except during the hunting season. There was one significant incident of vandalism. A few days after the new entrance signs were installed along Bootlegger Trail, the signs were hit with 15 to 20 rifle rounds of about .30 caliber. The primary damage was on the back sides of the signs where the bullets exited, slintering the plywood.

Due to the low level of hunting pressure on the refuge hunting violations were lower than normal. No violation notices were written for infractions on the refuge.

Date	Violation	Action	Disposition
10/08	Possession of lead shot while afield	Warning	none

I. EQUIPMENT AND FACILITIES

1. New Construction

After two years of planning and delay a large Parshall flume was installed in Lake Creek about one quarter mile upstream from the refuge boundary. The flume has an 8 foot wide throat and is 4 feet high. It is expected to pass 95 percent of all flows on Lake Creek giving the refuge a greatly enhanced capability of measuring incoming water. The flume is located at the site of an old unused irrigation diversion structure on the Richard Ewing ranch. A partnership agreement with Ewing permitted the refuge to remove the old structure and install the flume in exchange for nearby development of a new livestock water facility on the creek. The new flume site is a substantial improvement over the previous gauge site at the county road bridge a mile to the west. The steel flume was ordered from and fabricated by Roscoe Steel in Missoula, MT, using end-of-year funds in 1994. Wet stream conditions prevented the work from being completed in 1995. This was a force account project.

2. Rehabilitation

Maintenance Management System (MMS) funds were used to remove **asbestos** from three buildings. Asbestos siding on the gable ends of the refuge office, old pump house and oil house was removed. Asbestos ceiling panels were also removed from the inside of the pumphouse and oil house. The prior planning, phone calls, permitting, post project monitoring, etc., took more time that the actual work. Quality Urethane of Great Falls was the contractor on the job and completed the work in one day.

A force account project started in the winter of 1995 to modify the **Marsh Unit 4b islands** was restarted in December. The objective of the work is to improve the islands for waterfowl nesting, reducing its attractiveness to nesting california gulls, and improving the natural appearance of the marsh. The sandstone rip-rap surrounding each of the two-acre islands was dozed into stockpiles in 1995 and some of it was hauled and placed along the 4b/4c dike in 1995. In December additional rock was hauled out of the unit and a partnership effort was developed with some local companies to complete the work in early 1997.

After the completion of work on the Muddy Creek pump station in 1995, it became apparent that the **chain hoist** used to lift and move the motors and pumps in the pump station also needed to be replaced. MMS funds were used to purchase and install a new 5 ton capacity chain hoist. Anderson Steel of Great Falls was the contractor.

4. Equipment Utilization and Replacement

No new motor vehicles were received in 1996. A new 14,000 GVW fifth wheel trailer was purchased to replace an old heavy Wisconsin trailer. The new trailer was fabricated by Wilray Manufacturing of Ft. Benton, MT. It substantially improves our flexibility in hauling light and medium loads.

The four wheel drive seven passenger Suburban type vehicle which was ordered in 1995 to replace the refuge 1988 Dodge Caravan had still not arrived by the end of the year.

In August, an 8' Parshall flume was installed in Lake Creek. The location on the Ewing Ranch, adjacent to the refuge, will provide capability to accurately measure about 90% of refuge inflows.

MLM **8/96**

A refuge crew places concrete grout around and under the new Lake Creek flume.
SJM **9/96**

Gale Brewer welds guardrails in place at the Lake Creek flume. After completion of the flume, a bridge was installed to provide landowner access across the creek. Guardrails will keep the cattle off the side slopes and out of the flume.

JEM **10/96**

A purchase order contract accomplished removal of remaining asbestos siding and ceiling panels from three refuge buildings. The contractor was very careFull in covering office windows and vents to prevent dust from entering.
JEM **7/96**

Maintenance worker Gale Brewer will attest "that two fork lifts are better than one!" This soft spot near the oil house was caused by soil settling after removal of an underground fuel tank.

SJM **3/96**

5. Communications System

To accommodate increased electronic mail and to provide separate fax lines and computer modem line two additional phone lines were hooked up in October. This now provides the station with four telephone voice lines, one fax line and one computer network line.

6. Computer Systems

One new computer were purchased this year for the Partners for Wildlife office. It is a Dell GM+ 5133 with a Hewlett-Packard Desk Jet 820 printer. The Windows 95 operating system that came with the new machine has given pause to several of the old DOS jockeys here.

No progress was made this year in getting a file server and network system installed for all the station computers. It is unfortunate that there is no interest at the top levels of the Service in a coordinated Service-wide approach to electronic data systems and networks.

J. OTHER

1. Cooperative Programs

Most cooperative ventures at the Complex are related to off-station activities which are handled through the Wetland Management District.

On July 9th and 10th the refuge hosted a steel shot seminar and shooting clinic conducted by Tom Roster. The clinic was sponsored by Montana Department of Fish, Wildlife & Parks. The program featured a lecture on effectiveness of steel shot and a comparison to the new bismuth shot. Attendees were also given an opportunity to patterning test their shotguns with different shot sizes and at different distances. Shooting instruction was also provided. Some participants who fancied themselves as experts at taking birds at 50 yards and beyond soon learned that was not the case.

2. Other Economic Uses

A free haying permit was issued to David Shane to harvest hay along Bootlegger Trail. The permit was effective July 15 and was used to manage vegetation along the county road lessening cost to the refuge and the county while reducing disturbance of nesting birds during the prime nesting season.

4. Credits

Martin wrote sections D.5-6, E.4, F.1-2,10, G., H.1-6,11 and J.4. McCollum wrote sections B., D.4, E.1-2,5-8, F.8-9, H.8,16-17, I. and J.1-2.

Photo credits are listed below the photos.

Photographer Arthur Morris deserves special recognition for his contribution of color prints of California Gull predation on a gadwall brood taken in June 1995.

Top: "Students" head to the traps for practice, after a lecture on steel shot and shooting by Tom Roster a nationally known expert on steel shot.

Bottom: Tom Roster demonstrates pass shooting techniques prior to participation by clinic attendees. The clinic was hosted by the refuge and sponsored by the Montana department of Fish, Wildlife and Parks.

JEM **7/96**

1996 ANNUAL NARRATIVE

REVIEW AND APPROVALS

BENTON LAKE WETLAND MANAGEMENT DISTRICT

Great Falls, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1996

Refuge Manager	Date	Associate Manager Review	Date

Regional Office Approval	Date

BENTON LAKE WETLAND MANAGEMENT DISTRICT

Great Falls, Montana

ANNUAL NARRATIVE REPORT

Calendar Year 1996

INTRODUCTION

TABLE OF CONTENTS

Page

G. WILDLIFE

H. PUBLIC USE

I. EQUIPMENT AND FACILITIES

UNITED STATES
DEPARTMENT OF THE INTERIOR

WATERFOWL PRODUCTION AREAS

UNITED STATES
FISH AND WILDLIFE SERVICE

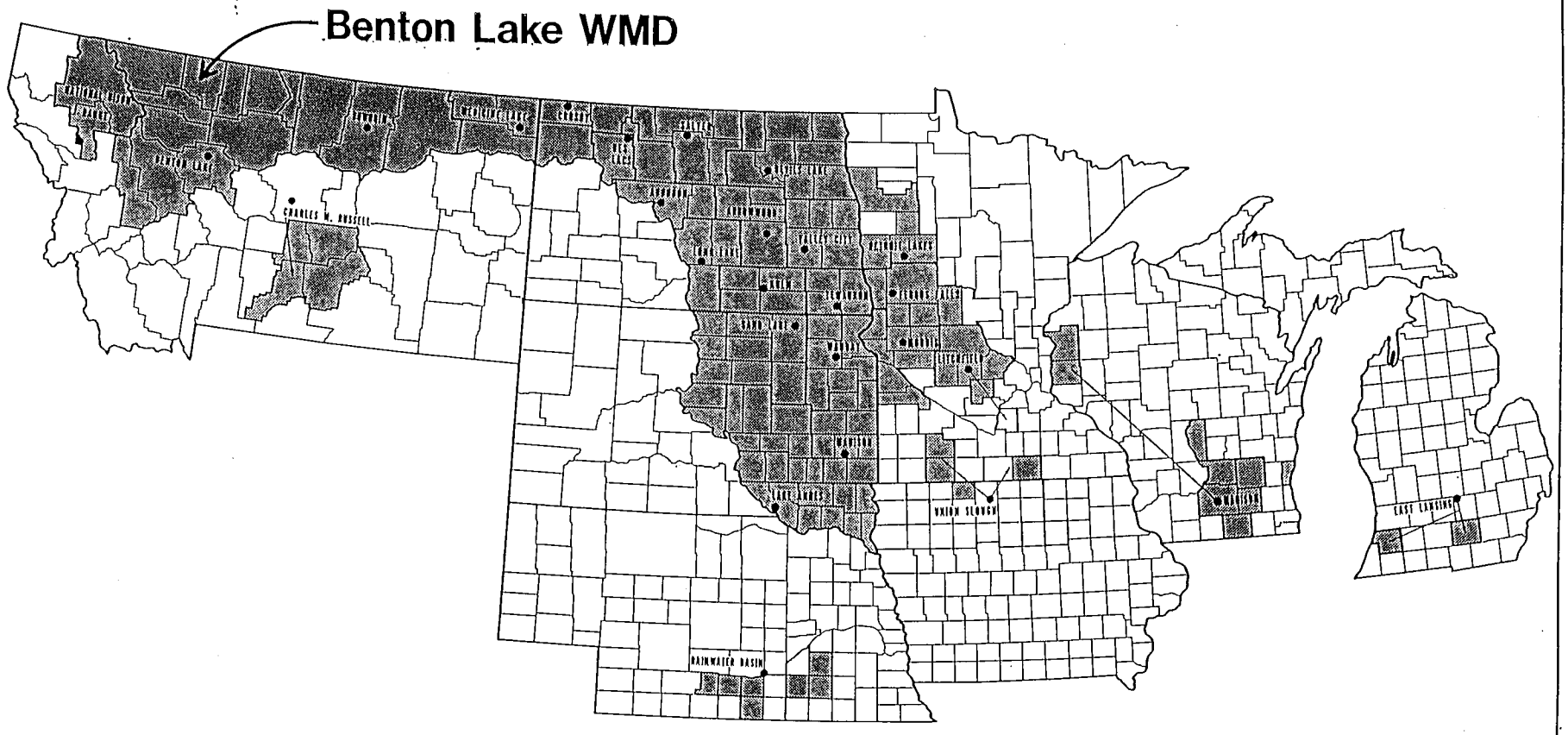


Figure 1.

COUNTIES IN WHICH SOME WETLANDS HAVE BEEN ACQUIRED OR LEASED

WETLANDS MANAGEMENT DISTRICT

COMPILED IN THE DIVISION OF REALTY

0 100 200 300 MILES

BENTON LAKE WETLAND MANAGEMENT DISTRICT

* Benton Lake National Wildlife Refuge

▪ Waterfowl Production Areas

1.	Furnell	1,995.00 Ac	
2.	Ehli	475.24 Ac	
3.	Danbrook	327.00 Ac	
4.	Dunk	80.00 Ac	
5.	Brown	260.00 Ac	
6.	Long Lake	645.66 Ac	
7.	Blackhurst	320.12 Ac	
8.	Cemetary	108.58 Ac	
9.	Peterson	94.20 Ac	
10.	Hingham Lake	280.00 Ac	*
11.	Jarina	640.00 Ac	
12.	Savik	397.00 Ac	
13.	Sands	378.93 Ac	
14.	Brumwell	251.50 Ac	
15.	Hartelius	307.22 Ac	
16.	Big Sag	349.58 Ac	**
17.	Kingsbury Lake	3,733.69 Ac	**
18.	Schrammeck Lake	420.24 Ac	
19.	Blackfoot	1,524.60 Ac	
20.	Kleinschmidt Lake	1,120.00 Ac	
21.	Arod Lakes	797.46 Ac	
TOTAL FEE ACREAGE		14,506.02 Ac	

* Leased from the State of Montana
** These WPA's contain acreage held under BLM and State ownership

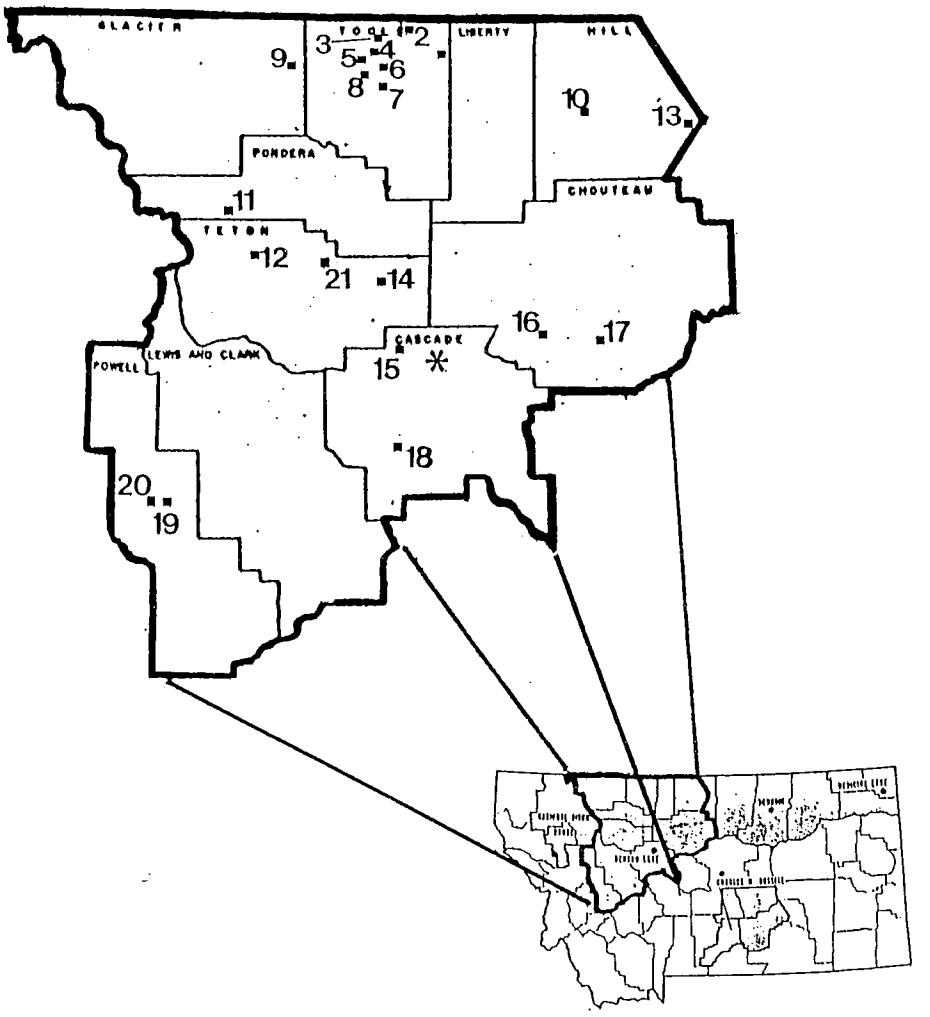


Figure 2.

Welcome to Montana where even highway rest stops can be dangerous.
RFJ **04/96**

Montana farmers - direct and to the point!
RFJ **07/96**

A. HIGHLIGHTS

The Montana Partners for Wildlife Program was recognized by the American Fisheries Society through its group award. The award was in recognition of the Partners Program outstanding contribution to the protection and enhancement of fisheries resources in Montana (E.7).

Five Montana Conservation Corps members spent a week removing invading trees from the sagebrush/grassland on the Kleinschmidt Lake WPA in Powell County (F.5).

Extensive Stream Restoration efforts on Monture Creek in the Blackfoot Valley by PFW and FWP staff are paying big dividends. Bull trout redds on this creek have increased from eight in 1989 to 65 in 1996 (E.7).

A wolverine was seen on the Kleinschmidt Lake WPA in Powell County on May 22nd (G.10)

The year ended with very heavy snow and bitterly cold weather. Snow depth west of the divide in the Blackfoot Valley exceeded three feet on the level with the mountain snowpack at more than 150 percent of normal (B).

Point count transects were continued on the Furnell and Kingsbury Lake WPA's. Thirty-eight species were detected at Furnell along 47 points on five transects. Forty-three species were detected along 44 points on eight transects at Kingsbury Lake. On the Furnell WPA, 66 Sprague's pipits and 16 Baird's Sparrows were among the birds observed (D.5).

Three additional conservation easements totalling 2,845 acres were acquired under the Small Wetlands Acquisition Program. In addition, $947,000 of Land and Water Conservation Fund (LWCF) dollars were appropriated for FY97 by Congress to acquire easements in the Blackfoot Valley. Two LWCF conservation easement options totalling 2,565 acres were signed and will be completed early next year (C.2).

The beauty of winter - a frosty morning on the Montana prairie.
RFJ 11/96

B. CLIMATIC CONDITIONS

The year began cold with normal moisture throughout most of the WMD. Snowpack west of the continental divide and in the northern portion of the WMD along the Canadian border was above normal. Runoff in these areas was excellent while the southern portion of the WMD received very limited amounts of runoff. Spring rains were near normal throughout the WMD with summer precipitation below normal. The year ended with heavy snow and cold temperatures throughout the district. Snowfall west of the divide was significantly above normal during November and December. Glacier County, just east of Glacier National Park, received more than 80 inches of snow during this period and many roads were impassable. Local weather conditions can vary greatly across the WMD. Precipitation totals from National Weather Service (NWS) reporting stations near WPA's can be found in Table I.

TABLE I

PRECIPITATION RECORDS FOR SELECTED NWS REPORTING STATIONS

County	(Station)	1996 Total	Normal	Percent of Normal
Cascade	(Cascade)	12.22	15.89	80%
Chouteau	(Geraldine)	16.87	15.55	108%
Glacier	(Cut Bank)	12.87	11.73	110%
Glacier	(E. Glacier)	34.59	28.23	123%
Hill	(Havre)	10.46	11.16	94%
Lewis-Clark	(Augusta)	13.52	13.08	103%
Liberty	(Chester)	9.79	11.48	85%
Pondera	(Valier)	11.33	11.97	95%
Powell	(Ovando)	16.62	13.45	124%
Teton	(Choteau)	12.45	10.54	118%
Toole	(Sunburst)	11.85	12.11	98%
Toole	(Gold Butte)	14.04	12.96	108%

C. LAND ACQUISITION

1. Fee Title

Land acquisition in the district has shifted from traditional fee title work towards more emphasis on acquiring perpetual easements. Although we continue to place a high priority on WPA roundouts, declining O&M funding has made it increasingly difficult to manage our existing WPA's much less any new fee tracts. Expanding the easement program has enabled us to continue protection of important trust species habitat while minimizing our direct management costs. No additional land was purchased in fee title during 1996.

Approximately 48,000 acres have been delineated for fee purchase in the district. In addition, roundouts are needed for nearly half of the existing WPA's. Since 1975, some 12,403 acres have been acquired in eight counties. An additional 2,222 acres of Bureau of Land Management (BLM) and state lands are managed within the boundaries of three WPA's in the district (Table II).

TABLE II

County	Acquisition Goal	Number of WPA's	Total Acres
Toole	4,675	8	4,331.60
Chouteau	2,500	2	2,140.79*
Cascade	2,000	2	727.46
Hill	1,000	2	378.93**
Teton	2,251	3	1,445.96
Pondera	2,000	1	640.00
Powell	1,300	2	2,644.60
Glacier	2,096	1	94.20
Liberty	2,000	0	0
Lewis & Clark	500	0	0
Totals	**20,322**	**21**	**12,403.54**

TOTAL MANAGED ACRES = 14,626.02

* An additional 1,942.48 acres of State and BLM lands are contained within WPA boundaries.
** An additional 280 acres are leased from the State of Montana (Hingham Lake WPA).

2. Easements

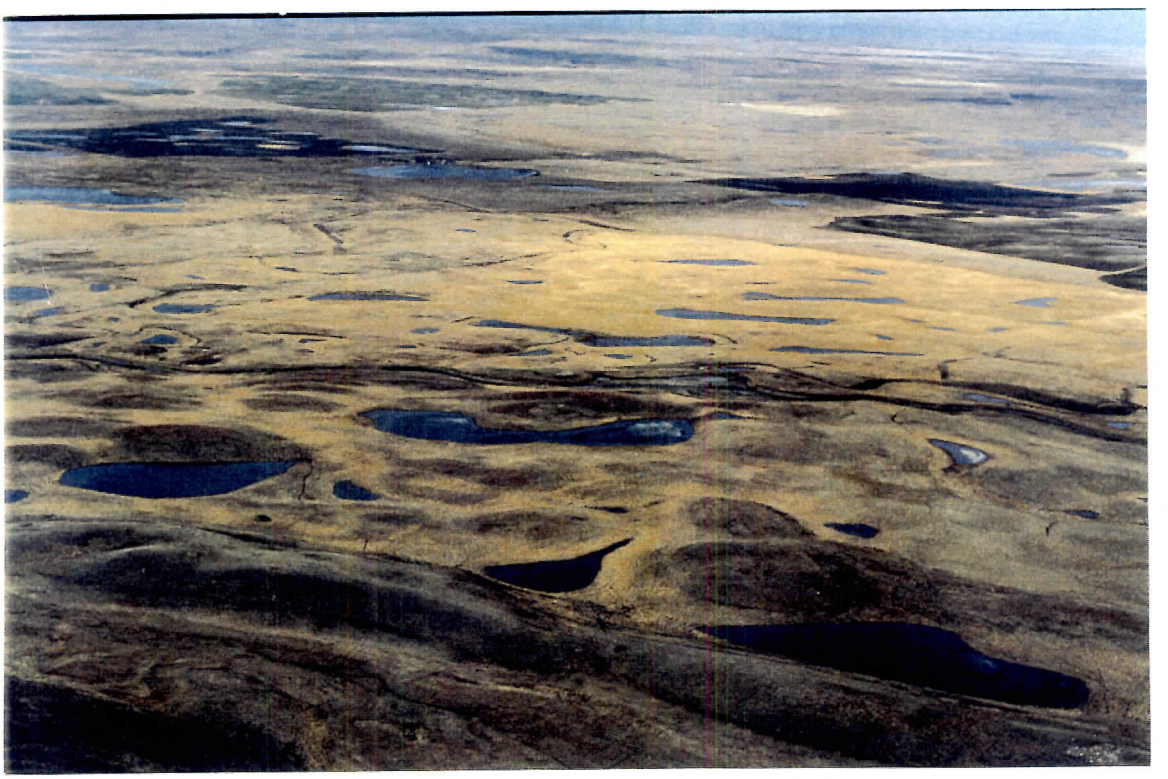
Four separate easement programs are used to protect habitat in the district. They include perpetual wetland, grassland, conservation and Farmer's Home Administration (FmHA) easements that each restrict certain land use activities on various habitat types.

a. Wetland and Grassland Easements

The Small Wetlands Acquisition Program continues to provide adequate funding for our wetland/grassland easement program. Only one additional wetland (Glacier County 57X) and grassland easement (Glacier County 57G) was purchased in 1996. The 800 acre Weathered tract is located along the Canadian border within the Blackfeet Indian Reservation and includes protection of 64 wetland acres and 145 acres of native prairie.

Currently, wetland easements are scattered throughout all ten counties of the district, protecting 7,556 wetland acres on 137 tracts (Table III). Grassland easements have been acquired in two counties protecting 5,132 acres on five tracts (Table IV).

Native grasslands and wetlands in the Sweetgrass Hills of Toole County.
RAG 04/96



Part of the A&N Cattle Company wetland/grassland easement along the Canadian border in Glacier County. Much of this easement is being reseeded to native grass species.
RAG 04/96

TABLE III

WETLAND EASEMENT ACRES BY COUNTY

County	Easement Tracts	Wetland Acres
Toole	56	2,933
Glacier	47	2,203
Liberty	9	428
Pondera	9	733
Hill	6	407
Cascade	4	78
Powell	2*	456*
Lewis & Clark	2	247
Teton	1	50
Chouteau	1	21
Totals	**137**	**7,556**

* Note: Powell County totals have been revised downward from previously reported acreage due to the conversion of wetland easement tracts to a new conservation easement program. These protected wetland acres are now reflected in Table VI.

TABLE IV

GRASSLAND EASEMENT ACRES BY COUNTY

County	Easement Tracts	Wetland Acres
Powell	2*	1,469*
Glacier	3	3,663
Totals	**5**	**5,132**

* Note: Powell County totals have been revised downward from previously reported acreage due to the conversion of grassland easement tracts to a new conservation easement program. These protected grassland acres are now reflected in Table VI.

b. Rural Economic & Community Development Services Easements

Three additional conservation easements were approved by USDA and recorded on Rural Economic and Community Development Services (RECDS), formerly Farmer's Home Administration, inventory properties during 1996. The 227-acre Sand's easement includes 85 acres of wetlands and some excellent riparian habitat along the Sun River. The Service will provide cost sharing to assist with reseeding 13 acres of cropland back to permanent cover. The 3,071-acre Henderson inventory property in Chouteau County lays in the foothills of the Bear Paw Mountains. Two Hundred and eighty (280) acres were placed under easement including 30 wetland acres and 250 acres of native prairie. A 729-acre inventory property (Johnson) located just north of Schrammeck Lake WPA in Cascade County was also inspected for possible easement opportunities. A 160-acre easement proposal was approved to protect 55 wetland acres and 105 acres of native prairie.

Two other proposals are still awaiting final approval pending the lease back-buy back rights of the delinquent borrower. One tract (Evans property) involves a 150 acre easement in Glacier County and the other 25 acres (Hurley property) in Teton County. To date, four RECDS easements have been recorded in the district (Table V).

TABLE V

RECDS EASEMENT ACRES BY COUNTY

County	Number of Tracts	Wetland Acres Protected	Grassland Acres Protected	Total Acres
Cascade	2	140	247	387
Chouteau	1	30	250	280
Teton	1	2	12	14
Totals	**4**	**172**	**509**	**681**

c. Conservation Easements

The primary goal of our conservation easement program is to prevent residential subdivision and commercial development of important habitat in the western portion of the WMD. The majority of this work continues to focus on the Blackfoot River Valley, although the program was expanded to include the Rocky Mountain Front and Sweetgrass Hills in 1996.

The 1.5 million acre Blackfoot watershed contains some of the best remaining trust species habitat left in the district. The diversity of fish and wildlife found here is exceptional and includes ten candidate species being considered for listing under the Endangered Species Act. Unfortunately, residential and commercial development are threatening to further fragment this unique ecosystem.

Under the Small Wetlands Acquisition Program (originally designed to prevent agricultural conversion of habitat in the prairie pothole region), the use of wetland and grassland easements doesn't adequately address the new threats to western Montana. This prompted us to develop a new easement program in 1994 that incorporates provisions of the wetland and grassland easements into a single document and adds additional restrictions to prohibit subdivision and development for residential, commercial or industrial purposes.

Much of the threatened habitat involves riparian areas, intermountain grasslands, montane forests and other areas that don't have sufficient wetland acreage to qualify for the Small Wetlands Program. A Preliminary Project Proposal (PPP) for the Western Montana Land and Water Conservation Fund (LWCF) Project was approved by the Washington Office to acquire conservation easements on 23,500 acres of private land within a 165,000 acre project boundary. Approximately 7.5 million dollars of LWCF funding will be needed to complete the project. A second component of the Western Montana LWCF project includes acquisition of conservation easements in the Mission Valley which will be administered by the National Bison Range. In FY 97, $947,000 was appropriated by Congress for easement work within both the Mission and Blackfoot Valley's.

Purchase options were signed for two conservation easements in the Blackfoot Valley using FY 97 LWCF funding. The 2,345 acre Jacobsen tract includes 3.5 miles of frontage along

both sides of the North Fork of the Blackfoot River and lies immediately north of the 1,120 acre Kleinschmidt Lake WPA. The second LWCF tract involves the 220 acre MacLachlan property which is located between three other easements in the Jones Lake area. We plan to close and record easements on both tracts in early 1997.

Efforts in the Blackfoot watershed involve integrating conservation easements with habitat restoration activities completed under the Partners for Wildlife (PFW) program. Over 1,600 wetland acres and 200 miles of stream/riparian habitat have been restored or enhanced on private land. Completed PFW projects often lead to opportunities to protect important wildlife habitat with perpetual easements. The PFW program has been instrumental in building public support for our easement program throughout the Blackfoot Valley. Acquiring conservation easements on private lands is helping to protect a vital habitat corridor between State Wildlife Management Areas (13,400 acres), Waterfowl Production Areas (2,600 acres), Nature Conservancy easements (8,975 acres) and Partners For Wildlife projects (129 sites) within the LWCF project area.

In addition to acquiring two easements with LWCF funding, three other conservation easements totalling 2,845 acres were acquired with Migratory Bird ("Duck Stamp") funding in 1996. Habitat protection on the 1,675 acre Murphy tract (Powell County 15C) was upgraded by converting a previously acquired wetland and grassland easement to the new conservation easement format. This property includes a significant portion of the Upsata Lake wetland complex and lies immediately adjacent to the Blackfoot-Clearwater Wildlife Management Area.

The second tract (Powell County 19C) protects the Coburn Ranch which includes an additional 632 acres of the Jones Lake wetland complex. The property is owned by an elderly couple with no children and would have most likely been subdivided and developed by the adjacent town of Ovando.

The third acquisition was our first conservation easement along the Rocky Mountain Front. The 538 acre Hall tract (Glacier County 55C) is located within the Blackfeet Indian Reservation and includes 92 wetland acres and 446 acres of native prairie. This portion of the WMD contains one of the largest remaining blocks of short-grass prairie left in the state.

In addition, conservation easement proposals were completed for two large ranches in the Sweetgrass Hills. Portions of both properties are already under wetland easement. Appraisal work was completed for an easement covering 9,200 acres of the Parsell Ranch. A purchase offer was made but we haven't been able to finalize a deal. The second proposal involves the adjacent Brown Ranch which includes 8,800 acres. Appraisal work will be completed in early 1997.

To date, conservation easements have been purchased on seven tracts to protect 9,840 acres in the district (Table VI).

TABLE VI

CONSERVATION EASEMENT ACRES BY COUNTY

County	Number of Tracts	Wetland Acres Protected	Grassland Acres Protected	Total Acres
Glacier	1	92	446	538
Powell	6	774	8,528	9,302
Totals	**7**	**866**	**8,974**	**9,840**

3. Other

We were involved in a number of realty meetings during the year. In January, staff from Benton Lake, Bowdoin and Medicine Lake Wetland Management Districts met in Malta to discuss land acquisition priorities for the state. Competition for the available MBCA funding has become keen, making it difficult to protect important habitat within each district. Sullivan agreed to develop a set of acquisition guidelines and ranking criteria (with input from each WMD Manager) which are being used to screen tracts that are forwarded to the Realty staff in Lewistown for appraisal work.

In March, Region 6 Realty Chief Harvey Wittmier toured the Blackfoot Valley LWCF project area and discussed the land acquisition program for the state. This gave Harvey a chance to see some of the threats and challenges facing us in the district. We have long complained that Montana hasn't had enough realty staff or funding to take advantage of all the opportunities to protect trust species habitat. Fortunately, we have no revenue sharing problems, noxious weed complaints, Governor approval requirements or other major impediments to purchasing land or easements in Montana. Yet we have some of the best wildlife habitat remaining in the lower 48 states.

With little or no prospect of getting additional Realty staff from Denver we floated a proposal to establish a Realty position at Benton Lake. Sullivan agreed to spend 50% of his time on training and work assignments for Realty which would pay for half of his salary costs in FY 97. At the beginning of FY 98 we will have to decide whether or not to make this a full time commitment.

D. **PLANNING**

4. Compliance with Environmental and Cultural Resource Mandates

Pesticide Use Proposals were written and approved at the field level. All required Federal, State, and Tribal permits as well as endangered species and cultural resource reviews are completed for each Partners for Wildlife project.

5. Research and Investigations

a. Benton Lake WMD 96 - Breeding Bird Response to Partners for Wildlife Projects in the Blackfoot Valley of Montana.

Staff from the Montana Cooperative Wildlife Research Center at the University of Montana began this project in July of 1995. Work continued on this project in 1996. Three nest searches were conducted on the Blackfoot WPA between May and July. Nine duck nests were found and five hatched for a Mayfield success rate of 26%. During a brood survey on the unit in early August, 43 duck broods were observed. The brood survey was conducted from the shore and no effort was made to search the large areas of emergent cover on the unit so this should be considered a minimal count. It appears that on this unit most waterfowl nesting is not in the seeded grasslands. Large areas of sagebrush/grassland, emergent vegetation and timbered areas were not searched. Three hundred and fifty acres of sagebrush/grassland on the Kleinschmidt Lake WPA were searched with four dogs and four observers in late June and only one destroyed nest was found. This unit also has an excellent wetland complex with numerous breeding pairs. It appears that nesting hens in this valley may be selecting non-traditional nest sites. The primary goal is to determine the level of migratory bird use on PFW projects in the Blackfoot Valley. Breeding bird surveys, nest searches, and brood surveys will be the primary tools used in this project. Monitoring the level of bird use on the Kleinschmidt Lake and Blackfoot WPA's is also included.

b. Benton Lake WMD Non-Game Monitoring Program

Point count transects were established on the Furnell and Kingsbury Lake WPA's in 1995. The point count method is used to census grassland avifauna with point count stations at least 200 meters apart plus an additional random distance to ensure statistical viability. During the ten minute period spent at each point the species, sex, and type of detection are recorded (visual, singing, or calling) as well as the distance of the bird from the point center, and detection time.

A total of 411 individuals and 38 species were detected along 47 points on five transects on the Furnell WPA in 1996. The rolling prairie interspersed with numerous shallow wetlands on this unit is typical of the glaciated prairie pothole region. Savannah sparrows were the most abundant species detected followed by Common Snipe. Seven Baird's sparrows, which are listed as rare by the Service in Region 6, were detected on this unit. Sixteen Baird's sparrows were detected on this unit in 1995.

A total of 420 individuals and 43 species were detected along 44 points on eight transects at the Kingsbury Lake WPA. This WPA is situated in the foothills of the Highwood mountains with rolling terrain and steep rocky breaks. Transects on this unit were located in grassland, riparian zone and greasewood flats. Western meadowlarks were the most abundant species detected followed by Lark Buntings. Only one Sprague's pipit and no Baird's sparrows were detected on this unit. The third most abundant species detected on this unit was the Brewer's blackbird.

E. **ADMINISTRATION**

1. Personnel

The ten county district is administered by personnel at Benton Lake NWR. Effective management of the district is challenging, due to the small staff and logistical problems associated with managing WPA's located over 100 miles from headquarters.

For additional information on training, meetings and other personnel matters, refer to section E.1 of the refuge narrative report.

5. Funding

Operations and maintenance (1260) funds are shared between the refuge and WMD. Maintenance and development needs for the district were identified in the Annual Work Plan, Maintenance Management System (MMS) and the Refuge Operating Needs System (RONS). In addition, several "special project" proposals were submitted for the WMD involving watchable wildlife, wetland education, challenge grant initiatives, and river restoration funds. Additional funds were obtained from Trout Unlimited, Montana Audubon, Wildlife Forever, Pheasants Forever and Ducks Unlimited.

6. Safety

There were no lost time accidents associated with district field work in 1996.

Safety briefings are held before beginning all force account projects to assure the proper use of equipment and review any necessary safety precautions. For additional information regarding the station safety program refer to the refuge narrative report.

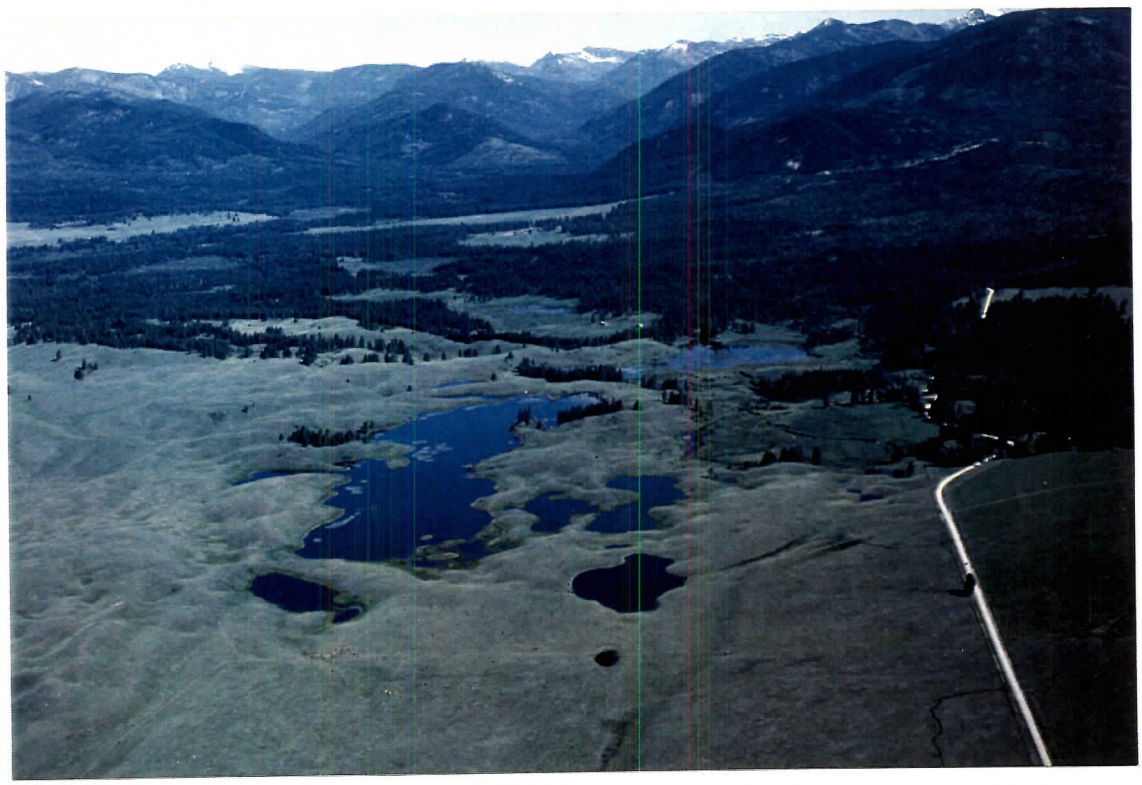
7. Technical Assistance

The two programs share staff-time, equipment, and funds. This interaction fosters creative problem solving and better utilization of scarce resources.

A. Administration

Benton Lake NWR/WMD provides office space and an Administrative Assistant to the Montana PFW Program. Montana PFW receives essential help with budget tracking, WEA processing, and other administrative functions. The arrangement increases the workload for the Refuge Financial Assistant but allows us to spend more PFW money for habitat restoration.

The two programs share other expenses. Partners for Wildlife provides funds for equipment, utilities, fuel, and supplies. Benton Lake WMD occasionally provides heavy equipment and maintenance help. PFW assists the WMD with wildfire control, law enforcement, banding, wildlife surveying and other routine WMD activities. The WMD staff assisted PFW with landowner contacts, wetland determinations, minimal effect determinations, FSA property inspections and other activities.



Unique wetland, grassland, in-stream aquatic and riparian habitats make the Blackfoot Valley a key Montana Partners for Wildlife Focus Area.

GAN 6/96

Above average snowfall coupled with excellent run-off conditions helped fill this restored wetland in the Blackfoot Valley in 1996.
GAN 4/96

Montana has thousands of miles of degraded riparian habitat. Restoring riparian and in-stream aquatic habitats was a high priority for the Montana PFW Program in 1996.
GAN 4/96

Partners for Wildlife Habitat Accomplishments

The Montana PFW Program employs a "Focus Area" approach to target habitat restoration efforts. This strategy allows us to prioritize limited staff and funding. Various criteria are used to establish PFW focus areas. NAWMP Joint Venture Areas automatically qualify. Other focus area designations are based on unique habitats, T&E or candidate species concentrations, threat levels, partnership opportunities, and restoration potential.

They are; 1) The Blackfoot River Watershed; 2) The Rocky Mountain Front; and 3) The Inter-Mountain West Joint Venture Area. Montana PFW Focus Areas outside the Benton Lake WMD are; 1) The Centennial Valley in SW Montana; 2) Beaver Creek PPJV Area; 3) Northeast Montana PPJV; and 4) Five-Valleys PPJV.

Montana PFW habitat restoration accomplishments for 1996 are summarized below.

Wetland Habitat

Wetland restoration projects remained a high priority for the Montana PFW Program in 1996. Table VII summarizes statewide wetland accomplishments in 1996.

TABLE VII

1996 PFW Accomplishments: Wetland Habitats

Project Type	Number of Basins	Acres Impacted	Total Cost
Wetland Restoration	21	189	$67,000
Wetland Establishment	22	87	$104,000
Wetland Enhancement	44	1,064	$110,000
TOTALS	**87**	**1,340**	**$281,000**

* Total Cost includes contributions by Non-FWS funding partners

Riparian and In-stream Aquatic Habitats

There are a number of reasons for promoting stream restoration. Certainly one of the most important is opportunity. Thousands of miles of Montana's streams have been degraded by grazing, irrigation diversions, hay production, channelization, and logging. Most of these areas are restorable. Another reason to target streams is landowner interest. Landowners have become educated about the value of healthy riparian habitats and many are keenly interested in restoration. Finally, biologists know that in-stream aquatic habitat, riparian areas, shrub zones and wet meadow wetlands provide critical habitat for native fish, migratory birds, T/E species, and resident wildlife. Montana's PFW Program is leading the way in stream restoration accomplishments and in our ability to leverage non-FWS funding partners. We expect these successes to continue.

Before

During

During

Restoring in-stream aquatic habitat involves some science, a lot of art, and a skilled excavator operator. When all three components come together the results can be amazing, as this stream restoration project along the Rocky Mountain Front demonstrates.

RJG 10/96

Benton Lake WMD includes the Rocky Mountain Front and Blackfoot Valley. Both of these landscapes are PFW Focus Areas. Table VIII shows 1996 riparian habitat restoration accomplishments

TABLE VIII

1996 PFW Accomplishments: Riparian & Instream Aquatic Habitats

Project Type	Number of Sites	Miles Restored	Total Cost
Riparian Restoration	12	45	$45,000
In-Stream Restoration	21	74	$222,000
TOTALS	**33**	**119**	**$267,000**

Funding Partnerships

Partnerships allow us to combine and leverage various sources of money for habitat work throughout Montana. Leveraging also allows us to participate in expensive and extensive restoration projects. Nearly every PFW project in Montana includes cost-share funds.

The process requires patience but the rewards are obvious. Table IX summarizes the amount of non-FWS monies used for habitat projects in 1996. The most important non-FWS funding sources for PFW projects in Montana are: private landowners, foundations, Montana Department of Fish, Wildlife and Parks, Trout Unlimited, Arctic Grayling Recovery Program, Ducks Unlimited, and Pheasants Forever.

TABLE IX

1996 PFW FUNDING PARTNERS - MONTANA PFW PROGRAM

Group/Agency	$ Contributed
US Department of Agriculture	$64,000
MT Department of Fish, Wildlife & Parks	$215,000
Ducks Unlimited	$13,000
Trout Unlimited	$15,000
Arctic Grayling Recovery Program	$104,000
Private Landowners	$171,000
Foundations & Grants	$22,000
Pheasants Forever	$10,000
TOTAL FUNDS PROVIDED BY PARTNERS	**$614,000**

This CRP tract, which is next to the Schrammeck Lake WPA in Cascade County, was grazed very intensively in the spring. The alfalfa regrowth during the summer was excellent.

RFJ 09/96

The Northeast Montana NAWCA project has requested $640,000 in NAWCA monies to fund projects on private lands within the Medicine Lake WMD and Ft. Peck Indian Reservation. This grant would also fund projects on Medicine Lake NWR. The Milk River Basin NAWCA project is requesting $297,000 in NAWCA funds for wetland projects on private and public land in the Bowdoin WMD.

Conservation Compliance (FSA)

Technical assistance was provided to NRCS on 27 minimal effect determinations, 22 wetland determinations, and 17 wetland Reserve Program site assessments.

Workloads related to the Montana Inter-Agency Wetland Team, USDA State Technical Committee, development of the Montana State Wildlife Habitat Incentives Plan (WHIP), Environmental Quality Incentives Program (EQIP), and other USDA programs continued in 1996.

Farm Service Agency Inventory Properties

The FSA Conservation Easement program experienced major changes in 1996. Rule changes and tightly defined criteria have made the program unusable for most properties. Montana PFW and WMD staffs did inspect eight properties in 1996 and easements were recommended on two properties. Decisions from FSA on the proposals are pending.

Conservation Reserve Program (CRP)

Staff from the Montana PFW Program and Benton Lake WMD continue to be involved in a variety of CRP issues. Congressional debate on the new Farm Bill will ultimately determine CRP's fate. Montana has a CRP Task Force and the Task Force is meeting with AG groups, congressional delegations, conservation organizations, and private landowners attempting to strengthen support for extending CRP.

Montana PFW and Benton Lake WMD staffs are also involved in statewide CRP issues such as emergency haying and grazing, primary nesting dates, CRP approved cover practices, and comments on proposed CRP Rules.

8. Other Items

Revenue sharing checks for FY 1995 totalled $12,903 or 65.7% of full entitlement, an 11.4% decrease from last year. Payments less than 100% entitlement still far exceed personal property taxes paid by private landowners in the state. As an example, the private taxes paid prior to our acquisition of the 1120 acre Kleinschmidt Lake WPA in Powell County were $280 and the revenue sharing payment was $2,520, a 900% increase, while prior taxes paid on the 1525 acre Blackfoot WPA in Powell County were $590 and the revenue sharing payment was $2,781, a 471% increase. Consequently, county commissioners in the district are generally supportive of our small wetlands program. Checks were personally delivered to all County commissioners except for the Glacier and Hill County checks which were mailed.

F. HABITAT MANAGEMENT

1. General

The goal of habitat manipulation on WPA's is to protect and enhance wetlands and maintain maximum productivity in both native and tame grasslands. Haying, grazing and burning are the primary management tools used in the Benton Lake WMD. WPA habitat types include approximately 3,691 acres of wetlands, 7,384 acres of native grassland, 2,979 acres of tame grasses/legumes, 220 acres of forest, 68 acres of riparian habitat and 60 acres of cropland.

2. Wetlands

In the northern tier of WMD counties snowfall in the winter of 1995/96 was adequate to provide good runoff. Most temporary and seasonal wetlands held some water during the breeding season. Runoff west of the divide was excellent with virtually all wetlands holding water through early summer. Summer rainfall was limited throughout most of the WMD and most seasonal and temporary wetlands dried up by summers end. Early fall rains were limited also, but heavy snows began west of the divide in late October and the year ended with well above normal snowpack which will provide exceptional spring runoff.

High water levels in the wetlands on the Jarina WPA in Pondera County eliminated most emergent vegetation. Segments of boundary fence were underwater and at least one small island was created along the county road when high water levels in the road ditch cut off a small peninsula in a seasonal wetland. Brood cover was limited on this unit as a result of the high water levels.

The seasonal wetlands on the Arod Lakes WPA in Teton County held water through mid summer as a result of good runoff and timely rains. Numerous waterfowl broods used these wetlands throughout the breeding season. Garrison creeping foxtail began spreading through the small seasonal wetlands that were restored on this unit in 1994.

Construction of the drainage project that eliminated North Halfway Lake was completed. The main runway for the Havre airport runs between Halfway Lake on the Sands WPA and North Halfway Lake which lies on private land. The Federal Aviation Administration has expressed concern about the potential for a bird strike hazard as a result of waterfowl flying back and forth across the runway between Halfway Lake and North Halfway Lake. After extensive negotiations we agreed to allow the drainage of North Halfway Lake with appropriate mitigation which was accepted late in 1994. The first attempts to drain North Halfway Lake in the spring of 1996 caused some significant problems. Water running down the highway ROW began to erode the borrow ditch and expose gas lines and telephone cables. Modifications were made and a second attempt was made to drain the wetland. During this attempt the outlet pipe became clogged with debris which required further modifications. The wetland was eventually drained by the end of the summer.

3. Forests

The Blackfoot WPA is the only WPA in the WMD with forested habitat. Two hundred and twenty acres of Ponderosa pine on Marcum mountain and 68 acres of riparian habitat (cottonwoods, aspen, willow) along the Blackfoot river are found on this unit. No active management has been conducted in these forested areas. Our goal is to protect them from grazing and logging activities conducted on adjacent private land. Recovery of the riparian

Gale Brewer installs permanent electric fence on the Jarina WPA, in Pondera County, in preparation for a new grazing program.
RFJ 07/96

Implementation of the Jarina WPA grazing system was the first grazing management activity conducted on the unit since it was acquired in 1986.
RFJ 06/96

area that was fenced on this unit in 1992 is continuing. Red-osier dogwood has become common in the fenced area where cattle no longer have access. Lush grass was present in the riparian zone just prior to freeze-up unlike previous years when the areas had been heavily grazed all year and no new growth was present at freeze-up.

4. Croplands

Approximately 60 acres of cropland were included in the 120 acre Ehli WPA roundout that was purchased in 1993. These acres continue to be farmed in an effort to clean up the seedbed prior to seeding these acres back to grass. This field will be seeded to a DNC mix in the fall of 1997.

5. Grasslands

Five Montana Conservation Corps members spent a week in October removing trees from the sagebrush/grassland on the Kleinschmidt Lake WPA. Mountain Juniper, Ponderosa Pine, Douglas Fir and Western Red Cedar have invaded the grasslands as a result of the suppression of fire.

The WMD includes 6,450 acres of native grassland. Most of this lies in the eastern portion of the district and consists mainly of western wheatgrass and green needlegrass. WPA's in the foothills and mountainous areas contain primarily western wheatgrass, bluebunch wheatgrass, and rough fescue. Grasslands are monitored and management activities are prescribed when vigor declines and species composition begins to deteriorate.

A grazing system was developed by NRCS for the 640 acre Jarina WPA in Pondera County. This unit is native prairie with a small area of tame grass. It has been rested for nine years and the cover quality and vigor of the native plant community has declined significantly. A four pasture system was implemented in June and ran for 121 days. A total of 403 AUM's were utilized on this unit. Electric fencing was used with a solar powered charger and we had no problems with confinement or movement.

NRCS staff also developed a grazing system that included 160 acres of the Blackfoot WPA in Powell County. The system is designed with five separate pastures on and off the WPA. When one of the two pastures on the WPA is grazed a corresponding private pasture will be rested.

6. Other Habitats

Two hundred replacement trees were planted in the two year old shelterbelt on the Arod Lakes WPA. Wet conditions during the summer of 1995 caused problems in several low areas of the shelterbelt with some trees under water for up to two months. It was quite a change from the extremely dry conditions of 1994 when the shelterbelt was first established. We chose to replace all dead trees, regardless of species, with American plums. These are fast growing with excellent fruit production.

8. Haying

DNC rejuvenation continued with 433 acres on seven WPA's hayed in 1996 (Table X). Haying was not permitted before July 15 in order to protect ground nesting birds.

TABLE X

1996 COOPERATIVE HAYING PROGRAM

WPA	Acres Hayed
Long Lake	80
Schrammeck Lake	60
Sands	31
Ehli	60
Hartelius	66
Kingsbury Lake	76
Danbrook	60
TOTAL	433

The condition of our DNC stands has improved significantly since we began our haying program. We have eliminated the heavily matted dead vegetation and stimulated the alfalfa. These stands are in excellent condition and we have been able to avoid the farming and reseeding cycle that is often needed in old decadent stands.

9. Fire Management

No prescribed burns were conducted in the WMD in 1996. We were also fortunate to escape any wildfires.

We have attempted for the past three years to burn a 65 acre native grass seeding that is heavily infested with cheatgrass on the Blackfoot WPA. Uncooperative weather conditions, wind and distance from headquarters have made burning impossible. We decided to use cattle this year to graze the cheatgrass and prevent seed production. Sixty-six animals were placed on the field for three different time periods during spring and early summer. It appears that the amount of cheatgrass has been significantly reduced.

10. Pest Control

Canada thistle, musk thistle, spotted knapweed, diffuse knapweed, Russian knapweed, small whitetop, leafy spurge and yellow toadflax are the targets of our weed control efforts. Mechanical, biological and chemical control methods are used. Fortunately, most infestations are small.

In 1996, a total of 1.35 acres of noxious weeds on three WPA's were treated with chemicals (Table XI). Forty acres of Canada and musk thistle on the Savik WPA were mowed for the third consecutive year. Stem density has been significantly reduced. Twenty acres of Canada thistle in scattered patches were mowed on the Arod Lakes WPA. This was the third year that thistle on this unit has been mowed. We have completely eliminated several patches and in others the stem density has been reduced to a level where no treatment is necessary. It appears that the creeping alfalfa that was seeded on this unit is outcompeting the Canada thistle and slowly eliminating it.

TABLE XI

1996 CHEMICAL NOXIOUS WEED CONTROL

WPA	TARGET SPECIES	ACRES	CHEMICAL/ACRE
Blackfoot	Leafy Spurge Yellow Toadflax	.25	1 pint Tordon/1 quart 2,4-D
Arod Lakes	Russian Knapweed	.5	1 pint Tordon/1 quart 2,4-D
Schrammeck Lake	White Top	.6	1 ounce Escort
	TOTAL ACRES	**1.35**	

No additional releases of Agapeta zoegana, a root moth, and Cyphocleonus achates, a root weevil, were made on the Blackfoot WPA for spotted knapweed control. These insects were released on the unit in 1993, 1994, and 1995. Two moths, Urophora affinis and Urophora quadrifasciata, that attack spotted knapweed flowers are present on the unit. The release sites will be sampled in 1997 to determine if the insects have become established before any additional releases are made. We are hopeful that an array of biological control agents will begin to exert a significant level of control on spotted knapweed. This area is important deer and elk wintering range and has a healthy native bunchgrass community that we would like to preserve.

Brachypterolus pulicarius, an ovary feeding beetle, and Calophasia lunula, a defoliating moth, were released on the Blackfoot WPA as biological control agents for yellow toadflax in 1995. Dr. Bob Noweirski from Montana State University has started to establish insectiaries for these two species at various locations in the Blackfoot Valley. The level of toadflax infestation has increased dramatically in the valley during the past two years. Chemical control of toadflax is difficult, especially in the sagebrush community where significant damage can occur to the sagebrush plants.

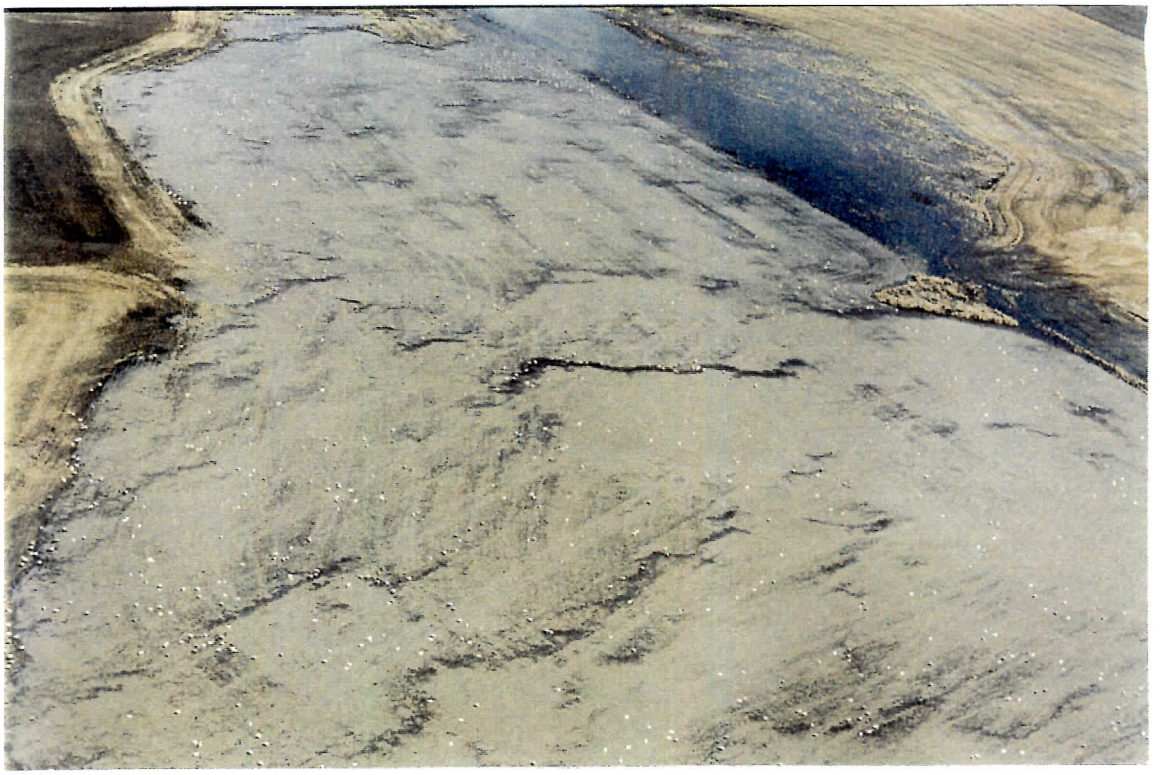
We placed 40 cows on a 65 acre native grass seeding on the Blackfoot WPA that was heavily infested with cheatgrass, Bromus tectorum, in an attempt to limit seed production. The cows were turned in in early May and removed in early June and turned back in when the next flush of growth began. Seed production was significantly reduced and the native grasses that were present in the seeding exhibited much more growth and covered significantly more of the field.

11. Water Rights

Routine monitoring and reporting of water rights was completed in the annual water use report.

13. WPA Easement Monitoring

No new violations were found in the WMD in 1996. Easement flights were completed in early April. Two potential violations were ground checked and no actual problems were found. Very little drainage was observed on private land.



Tundra swan use in a seasonal wetland in central Toole County.
RAG 04/96

Tundra swans feeding in stubble just north of the Benton Lake NWR boundary.
RFJ 10/96

G. **WILDLIFE**

Specific information on district wildlife populations is limited, due to its size and our limited staffing. Wildlife surveys are usually done incidental to other WPA projects. With an average driving distance of 100 miles from headquarters to most WPA's, collecting accurate and timely biological information is somewhat difficult.

1. Wildlife Diversity

The Benton Lake WMD stretches from the Rocky Mountains to the short grass prairie of the northern Great Plains. A wide diversity of wildlife habitat occurs in this 25,000 square mile portion of the state. Biodiversity on fee title land in the district is best represented by the varied habitat types of the Blackfoot WPA.

2. Endangered and Threatened Species

Montana includes habitat for two endangered mammals (Black-footed ferret and gray wolf), three endangered birds (peregrine falcon, whooping crane, and least tern), one threatened mammal (grizzly bear), two threatened birds (bald eagle and piping plover), two endangered fish (pallid sturgeon and white sturgeon) and two threatened plants (water howellia and Ute ladies-tresses).

Bald eagle populations continue to do well along several major rivers in the district. As many as 45 eagles have been sighted on the Blackfoot WPA which provides important migration and winter habitat. Fourteen active eagle nests have been documented in the Blackfoot River watershed including one located approximately 2 miles east of the WPA. The number of active nests has doubled in the past ten years. In 1993, a 42 acre wetland called wigeon marsh was restored on the Geoff Foote property, approximately 10 miles west of the Blackfoot WPA. Geoff called us in April of 1995 to let us know that a pair of bald eagles were building a nest on the shores of wigeon marsh. The pair began incubating eggs in March of 1996, but unfortunately no eggs hatched as far as Geoff could tell. We're not sure if the eggs were infertile or if several weeks of cold and snowy weather late in the incubation period caused the adults to abandon the nest.

Grizzly bears are found in and along the front range of the Rocky Mountains. There have been three confirmed grizzly sightings on the Jarina WPA in Pondera County since the unit was purchased in 1986. A sow with cubs was seen by an adjacent landowner just off the unit in 1996. Sightings have also been reported on the Savik WPA in Teton County. A feedlot is located just southeast of this unit and bears occasionally follow the scent east from the Rocky Mountain front.

3. Waterfowl

Waterfowl habitat is found in three distinct regions of the district. Most of the WPA's are located in the intensively farmed portion of Montana's Hi-Line referred to as the Golden Triangle. The Furnell WPA lies at a higher elevation in the Sweetgrass Hills along the Canadian border and is characterized by rolling glaciated prairie similar to the Coteau of North Dakota. The western portion of the district includes broad mountain valleys containing glaciated wetland complexes and extensive riparian habitat.

Trumpeter swan nesting platforms that were placed in wetlands on private land near Augusta along the Rocky Mountain Front in Lewis and Clark County.
RFJ 03/96

After anchoring a swan nesting platform in cattail , MTDFWP biologist Quentin Kujula and FWS biologist Randy Gazda add nest material to the platform in Smith Lake.
RFJ 03/96

Estimating waterfowl production on widely scattered and diverse WPA's has proven to be difficult. No single technique can be extrapolated to the entire district due to differences in habitat types and predator populations. The only way to come up with an accurate production estimate for all WPA's would be to sample each habitat type within each of the three distinct regions of the district. In the past, production estimates have been "guestimates" at best, based on partial pair counts and observations made incidental to other force account projects.

Nest dragging is the best alternative but getting an adequate sample size for all habitat types is impossible due to our small staff, and long distances to WPA's. Limited nest searching was conducted on the Blackfoot WPA in 1996. Nine duck nests were found in nine days of dragging (May 23-25, June 13-15, July 6-8) and five hatched for a Mayfield success rate of 26%. Four observers with four trained dogs spent six hours searching sagebrush/grassland on the Kleinschmidt WPA in Powell County on June 25. One destroyed nest was found. A brood survey on the Blackfoot WPA on August 9 found 43 duck broods. During these late brood counts emergent vegetation was widespread throughout the marshes on the unit and these numbers should be considered minimal.

Numerous swans are seen along the Rocky Mountain front during the spring and fall. Many of these birds are trumpeters with some Tundras mixed in. Several pairs of Trumpeters nest in the Augusta area of Teton and Lewis and Clark Counties. We placed ten nesting platforms for Trumpeters on small wetlands in the Augusta area in 1996. These were constructed out of PVC pipe and followed a pattern that was developed by staff at Yellowstone National Park. Larry Davis, the Montana FWP warden that lives in Augusta and has a personal interest in Trumpeters, chose the sites and monitored the structures. Although there were several pairs in the area none of the structures were used by swans in 1996. We're hopeful that the situation will change next year. Many of the nesting efforts that take place each year are near roads and people that are just looking for something to shoot at kill several trumpeters each year.

Canada geese continue to do extremely well throughout the WMD. Installing cone type nest structures for mallards is almost a waste of time since geese will occupy virtually all of the structures that are available. Thousands of Canada geese winter along the Missouri River and provide exceptional hunting opportunities.

A brood of nine pintails was seen on the Furnell WPA in Toole County on the 21st of May. Hundreds of waterfowl broods were seen on the Ehli WPA in early summer. This wetland was restored in December of 1993 and the emergent vegetation is coming on quite nicely.

4. Marsh and Water Birds

A diversity of marsh and water birds are found throughout the district. Sightings on WPA's this year included sandhill cranes, eared grebes, American coots, black-crowned night herons, great blue herons, white pelicans, red-necked grebes, pied-billed grebes, common loons and western grebes.

Pied-billed, horned, eared and red-necked grebes have all been known to nest on WPA's in the district. Six sandhill cranes were seen on the Arod Lakes WPA in late May and early June. Two years ago a pair of cranes nested on this unit and we were hopeful that additional nesting attempts would be made this year. Unfortunately this was not the case. Two crane nests were seen on the Blackfoot WPA this year.

A golden eagle that was electrocuted on a power pole several miles NE of Benton Lake NWR shows the typical burns.
RFJ 04/96

This is what the power pole looked like after the eagle was electrocuted.
RFJ 04/96

5. Shorebirds, Gulls, Terns and Allied Species

Excellent wetland conditions provided abundant habitat for shorebirds in the northern portion of the WMD in 1996. Species observed on WPA's included American avocets (*), marbled godwits (*), willets (*), upland sandpipers (*), common snipe (*), killdeer (*), Wilson's phalaropes (*), red-necked phalaropes, ring-billed gulls (*), California gulls (*), Franklin's gulls (*), long-billed curlews (*), black terns (*), short-billed dowitchers, common terns (*), sora(*), and spotted sandpipers (*). A common snipe brood was seen on the Furnell WPA in Toole County on June 10. An asterisk indicates species that nest on WPA's.

6. Raptors

Raptor's observed on WPA's during the year included golden eagles, bald eagles, prairie falcons, peregrine falcons, red-tailed hawks (*), Cooper's hawks, rough-legged hawks, American kestrels (*), ospreys, northern harriers (*), Swainson's hawks (*), great horned owls (*), short-eared owls (*), burrowing owls (*), and ferruginous hawks (*).

Burrowing owls were seen in the prairie dog town on the Kingsbury Lake WPA again this year.

7. Other Migratory Birds

The Shonkin Mourning Dove route in Chouteau County was completed this year. Twenty-seven doves were heard, and ten were seen.

The Breeding Bird Survey for the Highwood route was completed this year by volunteer Karen Stutzman. This 25 mile loop is located 20 miles northeast of Great Falls and contains 50 stops.

Minor modifications were made to the point count transects on the Furnell and Kingsbury Lake WPA's this year. These two units contain the largest blocks of native prairie on WPA's in the WMD (See D.5).

Numerous bobolinks were seen on the Schrammeck Lake WPA in Cascade County.

8. Game Mammals

Ten species of big game mammals occur in the district including white-tailed deer, mule deer, elk, black bear, grizzly bear, antelope, moose, mountain lion, bighorn sheep, and mountain goats. Bighorn sheep and mountain goats are the only two species that have not been observed on WPA's. No specific WPA surveys are conducted for these species.

White-tail and mule deer populations continue to do well on most WPA's in the district. Both species have taken advantage of the extensive CRP acreage on private land. The Marcum mountain portion of the Blackfoot WPA is an important wintering area for mule deer and elk.

Small herds of pronghorn antelope were regularly seen on Kingsbury Lake and Furnell WPA's during the year. Three antelope fawns were seen on the Furnell WPA on 5/31 and an antelope buck was seen on the Long Lake WPA on 6/25. Occasional sightings are made on the Ehli and Danbrook WPA's in Toole County. Antelope are scattered throughout the eastern half of the district.

Elk have been observed on six WPA's in the past three years. Five cow and calf elk were present on the Jarina WPA in Pondera county on the 23rd of May. A WPA neighbor indicated that a sow grizzly and cubs were also using the unit in July.

The Blackfoot WPA provides some of the best elk winter range in the Blackfoot Valley. The Marcum mountain portion of the unit is used extensively by wintering elk and mule deer. White-tailed deer are more common in the riparian areas along the Blackfoot River. The native grass seedings and the sagebrush/grassland on the west side of the unit are also used extensively by wintering elk.

The Long lake WPA in Toole County continues to attract large numbers of wintering elk and deer. The unit is surrounded by CRP land and the haying management program that is now in effect on the upland areas of the unit has created a vigorous and healthy tame grass/alfalfa stand that has proven to be very attractive to wintering deer and elk.

The large amount of CRP acreage in the WMD continues to provide excellent habitat for a wide array of resident and migratory species. Both whitetail and mule deer make extensive use of CRP fields.

Black bears, bobcats, and an occasional moose have been reported on the Blackfoot WPA by private landowners in the area.

10. Other Resident Wildlife

The eastern half of the district lies in the heart of Montana's Golden Triangle. Much of this intensively farmed area lacks sufficient winter cover for many species. Seven species of upland game birds are found in the district including sharp-tailed grouse, gray partridge, ring-necked pheasants, ruffed grouse, blue grouse, spruce grouse and Merriam's wild turkeys. All but the latter have been observed on WPA's.

Relatively mild winters and additional habitat on CRP lands have resulted in increased populations of upland game birds in portions of the district during recent years. Pheasant populations throughout the eastern section of the WMD remained at high levels. The Brady-Conrad area of Teton and Pondera Counties had high pheasant numbers although a hail storm that passed through the area just north and west of Brady in June did kill some birds. The population in Choteau County was similar to that of 1995. Gray partridge coveys were also common throughout the eastern portion of the WMD with overall numbers up from 1995.

Sharp-tailed grouse numbers continued to increase in the WMD. The Sweetgrass Hills area of Toole County had excellent reproduction. Sightings of large flocks were common throughout the big game season. MTDFWP biologists in Great Falls reported increases in lek counts throughout the central portion of the WMD. Numbers of dancing males were also up significantly in Cascade and Chouteau counties.

WMD staff did not see any blue grouse broods on the Marcum Mountain portion of the Blackfoot WPA during fence maintenance and weed control activities. Brood sightings on this unit have been common in the past.

Coyotes, red fox, raccoon, badger, bobcats, striped skunks, mink, long-tailed weasel, muskrats, beaver, Columbian and Richardson's ground squirrels, prairie rattlesnakes and black-tailed prairie dogs are also found on WPA's in the district.

A BLM employee observed a wolverine on the Kleinschmidt Lake WPA in Powell County during a mid-May pair count. As far as we know that is the first sighting of a wolverine on any WPA in the NWR System.

6. Marking and Banding

WMD staff assisted Montana Natural Heritage Program folks with their pelican banding efforts at Arod Lake in July. The breeding colonies are located on islands in the state owned portion of the lake which is just east of the WPA boundary. A total of 186 young pelicans were banded with standard FWS bands and red plastic leg bands with an alpha-numeric code. Numerous other young pelicans were present and could have been banded. The Heritage Program folks only wanted to band 200 birds. The Arod Lake colony appears to be in excellent condition. Mortality of young birds in the colony is very minor. Unfortunately, no census of breeding birds is done in this colony. Annual aerial photos of the colony are cheap and easy to obtain. Since the islands are state-owned it is a state responsibility to monitor the population levels.

H. PUBLIC USE

1. General

A variety of wildlife oriented recreation, including birdwatching, hiking, photography, hunting and trapping in accordance with state regulations takes place on Waterfowl Production Areas. The units are open year round for these activities. Travel on WPA's is limited to foot or horseback only and overnight camping and fires are prohibited on all units except the Arod Lakes unit in Teton County where camping is allowed on a small campground that was in use when we purchased the unit.

Monitoring public use activities on WPA's is very difficult. The large size of the district and the remote location of many of the units precludes routine patrols to check public use activities. We rely heavily on adjacent landowners and hunters to provide us with information on public use. Trapping and hunting are the most common public use activities on WPA's in the WMD.

6. Interpretive Exhibits/Demonstrations

The interpretive overlook and parking area on the Blackfoot WPA continued to receive significant use during 1996. More than 3000 visits were recorded on the traffic counter. Large numbers of spring migrants, numerous passerines and many waterfowl broods attracted many birders. Adult cranes with young were seen regularly feeding in the newly seeded native grass stands on the unit. Numerous duck and goose broods were present on the unit and provide excellent viewing opportunities. Black terns have established a nesting colony on the unit which provides additional viewing opportunities for birders. Two bluebird boxes that were placed on power poles near the parking area were again occupied by tree swallows that many visitors enjoyed watching. The unit is located along Highway 200 which is a heavily traveled main route between Missoula and Great Falls.

8. Hunting

In the eastern portion of the WMD upland game hunting accounts for most of the WPA visits during the fall season. Gray partridge were common on these units in the fall of 1996 and sharp-tailed grouse numbers continue to increase throughout the WMD. Large flocks of 50 to 100 were seen in the Sweetgrass Hills during the big-game season.

Hunting for ring-necked pheasants was excellent in the Great Falls and Ulm area and north into Teton and Pondera Counties. The Arod Lakes WPA in Teton County provided some excellent pheasant hunting. The area received heavy use throughout the season with 45 vehicles present on opening day. Weather conditions were excellent and most hunters shot limits of birds. This unit is becoming almost too popular. One of our neighbors contacted the Montana Department of Fish, Wildlife and Parks to express his concern about the large number of hunters using the unit. Although most hunters shoot a limit of birds on opening day it is certainly not a quality hunting experience. Hunting parties are shooting at each other, dogs are fighting and there are even arguments over who shot a particular bird. We had hoped that the hunting pressure would, at some point, become self-limiting. That has not happened yet and short of going to some sort of permit system we really don't know how to reduce the pressure.

Waterfowl hunting pressure on the Blackfoot WPA was similar to 1995. Eleven vehicles were present on the unit on opening day and by noon almost everyone had left. Pressure was light

throughout the entire valley and few birds were harvested. Hunting pressure was also very light on the Freezeout Lake GMA in Teton County. This is a large state-owned and managed area and by 3 pm most hunters had left.

Hunting pressure on the Kingsbury Lake unit in Chouteau County was down significantly in 1996. Large numbers of mule deer did not move onto the unit during the big game season and antelope numbers there remain at very low levels. The liberal regulations of the past few seasons have certainly reduced their numbers. On many days in the area it's almost impossible to find any antelope.

Schrammeck Lake, Blackfoot and Furnell WPA's also offer good hunting for mule and white-tailed deer. Deer numbers appeared to be up in the Sweetgrass Hills area of Toole County. Numerous does with twin fawns were seen during the big game season and bucks were also fairly common. Antelope numbers in the Furnell WPA area of Toole County have been significantly reduced by several years of a liberal policy of selling over the counter doe/fawn licenses. This policy has changed and over the counter doe/fawn licenses are no longer available. Hunting pressure has been significantly reduced and the quality has certainly improved. Instead of seeing a continuous parade of vehicles up and down the roads in the area it's now almost impossible to find any hunters.

The Marcum Mountain portion of the Blackfoot WPA is a popular site for late season elk hunting. The heavy snow that began during late October made access anywhere in the Blackfoot Valley very difficult. Snow depths in excess of three feet on the valley floor during the last half of the big game season made hunting very difficult. Elk were scattered throughout the area and many had not come out of the high country in spite of the heavy snowfall.

The Sands WPA is the only unit in the WMD that is closed to hunting. Gordon Sands, who donated the unit to the Service, stipulated in the deed that hunting and trapping be prohibited.

No biological data relative to harvests is collected in the WMD. Most units are located a significant distance from headquarters and we simply don't have time to visit them on a regular basis.

9. Fishing

The Blackfoot WPA provides the only cold water fishing opportunities in the WMD. Several species of trout are found in the Blackfoot River which winds through one corner of the WPA. The upper reaches of the Blackfoot River are not highly rated as a trout fishery. Problems with mine tailings entering the river have seriously degraded water quality and significantly reduced fish populations in the past. The river has started to recover and fish populations have increased in the middle reaches of the river near the WPA. Runoff from mountain snowpack was well above normal and caused severe erosion problems in many rivers in the Blackfoot Valley. A large section of riverbank on the WPA washed away during the high flow period and sediment loads in the river were much higher than normal for several months.

Warm water fishing opportunities for northern pike and yellow perch can be found on the Arod Lakes WPA. Ice fishing on this unit is a very popular pastime and northerns up to twenty pounds have been caught in the main lake. Fishing pressure was heavy once again with Middle and Round Lakes being the most popular. Numerous northerns less than one pound were caught which indicates that substantial natural reproduction is taking place in the lakes. Yellow perch fishing was very good for those individuals that figured out the technique for catching them. Most folks just like to come out and throw out a dead smelt on a tip-up and then just sit back and wait for a northern. It takes a little more work to find and consistently catch perch.

There is also some interest in early spring fishing at Arod. Fly-fishing for northerns is increasing in popularity and a number of folks like to wade the shoreline and use artificial lures to catch lots of small northerns when they're biting. Several individuals took advantage of the large carp that are present in the system and had fairly good success bowfishing.

Unfortunately, submergent plant growth in late May and June makes fishing almost impossible. The situation is especially bad during dry years when irrigation activity begins early. Arod lake itself is the primary storage lake for the Brady Irrigation Canal Company and can be drawn down to extremely low levels when irrigation begins early and continues during the growing season.

10. Trapping

Trapping of nine species of furbearers in the WMD including marten, otter, muskrat, fisher, mink, bobcat, lynx, wolverine and beaver are governed by state regulations. Trapping is restricted to Montana residents only. There are no restrictions on trapping predators such as coyotes, red fox, badger, weasels, and skunks.

Trapping interest in the WMD is almost non-existent. There are a few old trappers left out there that trap because they enjoy it, but there are virtually no young people that are following in their footsteps to carry on the tradition. If fur prices increased the situation might change and the level of interest in trapping might increase.

Trapping opportunity for fox, coyote, and raccoon in the eastern half of the WMD is virtually unlimited. Landowners in the local area welcome trappers on their property. Several WPA's, most notably the Arod Lakes unit, have high raccoon populations and we would certainly like to have someone trapping. Unfortunately, we just can't seem to generate any interest among the locals.

15. Off-Road Vehicling

Motorized vehicles are prohibited on WPA's, but unfortunately, some individuals never seem to get the message. Much of the off road use is associated with hunting from a vehicle or retrieval of big game. We find gates and fences that have been cut, but due to the infrequent nature of our visits to many of our units the chances of apprehending someone are almost non-existent.

The Montana Power Company has several gas wells on the Furnell WPA in Toole County which they check on a fairly regular basis. Unfortunately, they tend to leave the gates open in spite of numerous requests to make sure that the gates are closed. This causes problems with unauthorized access during the big game season. Gate closers were installed on the gates to the gas wells to make gate closing an easier process, but MPC employees are still leaving the gates open.

17. Law Enforcement

Law Enforcement in a district the size of Benton Lake is difficult, at best. Travel time to many of the units is a four hour round trip. As a result, law enforcement patrols are usually conducted in conjunction with other WPA work projects.

Johnson worked the Blackfoot WPA area on the opener of waterfowl season. Eleven vehicles were present on the unit. Blue skies, no wind and warm temperatures greeted the waterfowl hunters and few birds were harvested. One NOV was written for no Federal duck stamp.

On opening day of pheasant season, 42 vehicles were present on the Arod Lakes WPA in Teton County. For an 800 acre area, the hunters were almost as dense as the pheasants.
RFJ 10/96

Refuge staff assisted MTDFWP wardens in operating check stations in several locations during the hunting season. This one near Ethridge in Glacier County on October 14 netted several violations.
RFJ 10/96

This used to be a three-post fence corner on the Arod Lakes WPA until someone decided they needed firewood and pulled the posts out of the ground. Fires are prohibited on this unit.
RFJ 08/96

Someone in a stolen vehicle missed a turn and took out 15 rods of fence on the Arod Lakes WPA.
RFJ 03/96

Johnson worked the Sweetgrass Hills area on the opening day of antelope season. Hunting pressure was extremely light and only one harvested animal was checked. The elimination of over the counter doe/fawn licenses has been responsible for the reduction in hunting pressure and a corresponding increase in hunting quality. No check stations were set up due to the few scarcity of hunters

Johnson worked the Arod Lakes WPA area on the opening weekend of pheasant season. Hunting pressure was extremely heavy with 45 vehicles present on the unit. We are hopeful that at some point people will tire of the crowded conditions and the hunting pressure will be reduced. No one is having a quality experience when more than 100 hunters are crammed into 800 acres. Most hunters harvested a limit of birds with a few bonus sharptailed grouse and Hungarian partridge thrown in.

Assistance was provided to Montana game wardens with several check stations. On the 29th of September a check station was set up at Wolf Creek south of Great Falls on I-15. Citations were written for mallard hen overlimit, no species I.D., and failure to stop at a check station.

Additional check stations were set up at Dupuyer on Highway 89 in Pondera County on the 13th and Ethridge on Highway 2 in Toole County on the 14th. Citations were written for failure to stop at a check station, failure to leave evidence of sex on pheasants, failure to leave evidence of species and sex on antelope, and failure to leave evidence of species on waterfowl.

State wardens had attempted for several years to set up a check station at Rogers Pass on Highway 200, but icy roads and poor weather conditions had always prevented them from setting it up. This year they were finally able to put things together and ran a check station on November 3rd and 4th. Citations were written for failure to stop at a check station, failure to leave evidence of sex on pheasants, failure to leave evidence of species and sex on deer and waterfowl, and failure to properly validate a tag. The check station continued on the 4th and Montana wardens apprehended two Washington residents with 77 pheasants which is 59 over their possession limit. The men paid $2,825 in fines and lost their privileges to hunt, fish and trap in Montana for three years. The rancher who hosted these individuals in central Montana was interviewed and he did not feel that this should be a problem because there were lots of pheasants left after the men departed and they spent a lot of money in Montana.

One NOV was written on the Arod Lakes WPA for failure to leave evidence of species on shorebirds. One individual had a possession limit of "snipe" which were probably yellowlegs, dowitchers, etc.

MW Brewer and RM McCollum work to fence in a new parking area on the Kingsbury Lake WPA in Chouteau County. The area receives a substantial amount of deer and antelope hunter use each fall.
RFJ 10/96

This aluminum sign on the Kingsbury Lake WPA bares testimony of the breezes which often caress the prairies of Northern Montana.
RFJ 03/96

I. EQUIPMENT AND FACILITIES

1. New Construction

Approximately one mile of interior electric fence was constructed on the Jarina WPA to allow us to implement a grazing system for management of native prairie on the unit. An additional .5 miles of interior electric fence was constructed on the Blackfoot WPA which will allow us to manage a native grass seeding on the unit with cattle.

A small parking lot was constructed force account on the Kingsbury Lake WPA to allow for easier hunter access. The shoulders on the county road that runs through the unit are very steep which makes it very difficult to safely park a vehicle on the roadside.

2. Rehabilitation

Routine fence maintenance was completed on the Jarina, Blackfoot and Furnell WPA's. Winter snow damage is a continuing problem on the Jarina and Blackfoot units and elk can also cause significant fence damage.

3. Major Maintenance

Smith River Fencing removed 1.3 miles of old fence and constructed 1.3 miles of new fence on the Blackfoot WPA in Powell County. Fence contractor Lennie Proctor began working on 3.3 miles of fence removal and construction on the Kingsbury Lake WPA in Chouteau County. He was unable to complete the job before winter weather forced a shutdown.

J. OTHER ITEMS

4. Credits

Sullivan wrote Section C, J.1 and K. Stutzman and Neudecker wrote E.7 and Johnson wrote the remainder. McCollum edited and Martin assembled this report.